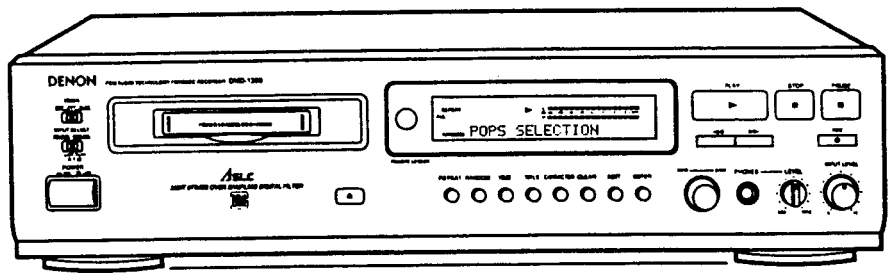
DENON

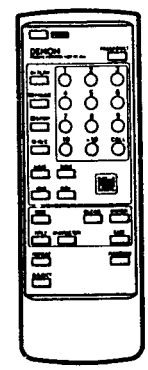
Hi-Fi Stereo Recorder

SERVICE MANUAL

MODEL DMD-1300/1550G

STEREO MD RECORDER





Model DMD-1550G is provided with side-woods .

— CONTENTS —

OPERATING INSTRUCTIONS ..... 2~11
DESASSEMBLY 12, 13
ADJUSTMENT ..... 14~17
BLOCK DIAGRAM 19
SEMICONDUCTORS ..... 20~28
PRINTED WIRING BOARD PATTERNS 29
NOTE FOR PARTS LIST 30
PRINTED WIRING BOARD PARTS LIST 30, 31
EXPLODED VIEW 32
PARTS LIST OF EXPLODED VIEW 33
MD MECHANISM EXPLODED VIEW 34
PARTS LIST OF MD MECHANISM ..... 35~39
WIRING DIAGRAM 39
SCHEMATIC DIAGRAM 40, 41

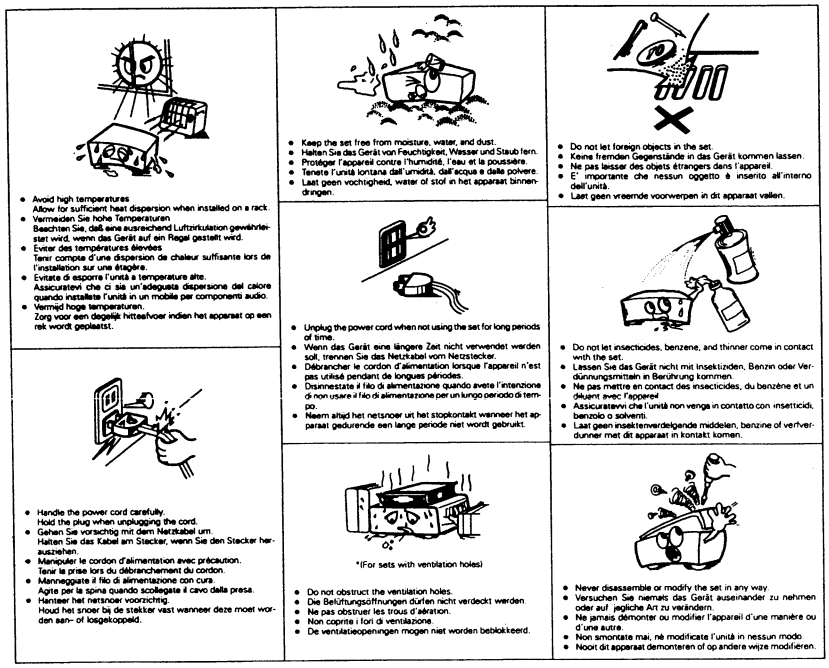
● Some illustration using in this service manual is slightly different from the actual set.

NIPPON COLUMBIA CO., LTD.

OPERATING INSTRUCTIONS

(Contents of operation are in regard to DMD-1300 Europe Model.)

NOTE ON USE / HINWEISE ZUM GEBRAUCH / OBSERVATIONS RELATIVES A L'UTILISATION NOTE SULL'USO /ALVORENS TE GEBRUIKEN



- Avoid high temperatures
  Allow for sufficient heat dispersion when installed on a rack.
- Vermeiden Sie hohe Temperaturen
  Beachten Sie, daß eine ausreichend Luftzirkulation gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird.
- Eviter des températures élevées
  Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère.
- Evitate di esporre l'unità a temperature alte.
  Assicuratevi che ci sia un'adeguata dispersione del calore quando installate l'unità in un mobile per componenti audio.
- Vermijd hoge temperaturen.
  Zorg voor een degelijk hitteafvoer indien het apparaat op een rek wordt geplaatst.

- Handle the power cord carefully.
  Hold the plug when unplugging the cord.
- Gehen Sie vorsichtig mit dem Netzkabel um.
  Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.
- Manipuler le cordon d'alimentation avec précaution.
  Tenir la prise lors du débranchement du cordon.
- Manneggiate il filo di alimentazione con cura.
  Agite per la spina quando scollegate il cavo dalla presa.
- Hanteer het netsnoer voorzichtig.
  Houd het snoer bij de stekker vast wanneer deze moet worden aan- of losgekoppeld.

- Keep the set free from moisture, water, and dust.
- Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern.
- Protéger l'appareil contre l'humidité, l'eau et la poussière.
- Tenete l'unità lontana dall'umidità, dall'acqua e dalla polvere.
- Laat geen vochtigheid, water of stof in het apparaat binnendringen.

- Unplug the power cord when not using the set for long periods of time.
- Wenn das Gerät eine längere Zeit nicht verwendet werden soll, trennen Sie das Netzkabel vom Netzstecker.
- Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes.
- Disinnestate il filo di alimentazione quando avete l'intenzione di non usare il filo di alimentazione per un lungo periodo di tempo.
- Neem altijd het netsnoer uit het stopkontakt wanneer het apparaat gedurende een lange periode niet wordt gebruikt.

*(For sets with ventilation holes)

- Do not obstruct the ventilation holes.
- Die Belüftungsöffnungen dürfen nicht verdeckt werden.
- Ne pas obstruer les trous d'aération.
- Non coprire i fori di ventilazione.
- De ventilatieopeningen mogen niet worden beblokkeerd.

- Do not let foreign objects in the set.
- Keine fremden Gegenstände in das Gerät kommen lassen.
- Ne pas laisser des objets étrangers dans l'appareil.
- E' importante che nessun oggetto è inserito all'interno dell'unità.
- Laat geen vreemde voorwerpen in dit apparaat vallen.

- Do not let insecticides, benzene, and thinner come in contact with the set.
- Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen.
- Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil.
- Assicuratevi che l'unità non venga in contatto con insetticidi, benzolo o solventi.
- Laat geen insektenverdelgende middelen, benzine of verfverdunner met dit apparaat in kontakt komen.

- Never disassemble or modify the set in any way.
- Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern.
- Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre.
- Non smontate mai, né modificate l'unità in nessun modo.
- Noort dit apparaat demonteren of op andere wijze modificren.

- **DECLARATION OF CONFORMITY**
  We declare under our sole responsibility that this product, to which this declaration relates, is in conformity with the following standards: EN60065, EN55013, EN55020, EN60555-2 and EN60555-3. Following the provisions of 73/23/EEC, 89/336/EEC and 93/68/EEC Directive.

- **ÜBEREINSTIMMUNGSERKLÄRUNG**
  Wir erklären unter unserer Verantwortung, daß dieses Produkt, auf das sich diese Erklärung bezieht, den folgenden Standards entspricht:
  EN60065, EN55013, EN55020, EN60555-2 und EN60555-3.
  Entspricht den Verordnungen der Direktive 73/23/EEC, 89/336/EEC und 93/68/EEC.

- **DECLARATION DE CONFORMITE**
  Nous déclarons sous notre seule responsabilité que l'appareil, auquel se réfère cette déclaration, est conforme aux standards suivants:
  EN60065, EN55013, EN55020, EN60555-2 et EN60555-3.
  D'après les dispositions de la Directive 73/23/EEC, 89/336/EEC et 93/68/EEC.

- **DICHIARAZIONE DI CONFORMITÀ**
  Dichiariamo con piena responsabilità che questo prodotto, al quale la nostra dichiarazione si riferisce, è conforme alle seguenti normative:
  EN60065, EN55013, EN55020, EN60555-2 e EN60555-3.
  In conformità con le condizioni delle direttive 73/23/EEC, 89/336/EEC e 93/68/EEC.
  QUESTO PRODOTTO E' CONFORME
  AL D.M. 28/08/95 N. 548

- **EENVORMIGHEIDSVERKLARING**
  Wij verklaren uitsluitend op onze verantwoordelijkheid dat dit produkt, waarop deze verklaring betrekking heeft, in overeenstemming is met de volgende normen:
  EN60065, EN55013, EN55020, EN60555-2 en EN60555-3.
  Volgens de bepalingen van de Richtlijnen 73/23/EEC, 89/336/EEC en 93/68/EEC.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

ADVARSEL: **USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.**

VAROITUS! **LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.**

VARNING- **OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERATS, KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÅLNING SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.**

"CLASS 1
LASER PRODUCT"

"SERIAL NO. _____
PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"

<DMD-1300 U.S.A. Model only>

NOTE:
This MiniDisc recorder uses the semiconductor laser. To allow you to enjoy music at a stable operation, it is recommended to use this in a room of 5°C (41°F) – 35°C (95°F).

LABELS (for U.S.A. model only)

CERTIFICATION
THIS PRODUCT COMPLIES WITH DHHS RULES 21 CFR SUBCHAPTER J APPLICABLE AT DATE OF MANUFACTURE.

CAUTION:
USE OF CONTROLS OR ADJUSTMENTS OR REFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED SERVICE PERSONNEL.

NOTE:
This unit may cause interference to radio and television reception if you do not operate it in strict accordance with this OPERATING INSTRUCTIONS.

This unit complies with Class B computing device rules in accordance with the specifications in Sub-part J or Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If the unit does cause interference to any radio or television reception, try to reduce it by one or more of the following means:

a) Turn the other unit to improve reception
b) Move this unit
c) Move this unit away from others
d) Plug this unit respectively into a different AC outlet

- **This is note in accordance with Section 15.838 of the FCC Rules.**

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

- **FOR U.S.A. & CANADA MODEL ONLY**

CAUTION
TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

- **POUR LES MODELES AMERICAINS ET CANADIENS UNIQUEMENT**

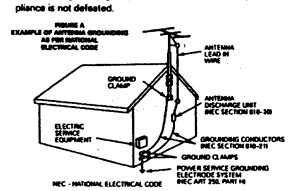
ATTENTION
POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

SAFETY INSTRUCTIONS

1. Read Instructions – All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Head Warnings – All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions – All operating and use instructions should be followed.
5. Water and Moisture – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. Carts and Stands – The appliance should be used only with a cart or stand that is recommended by the manufacturer.

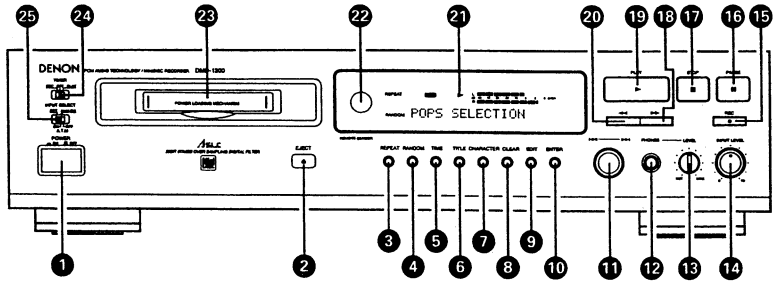
6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

7. Wall or Ceiling Mounting – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. Power Sources – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. Grounding or Polarization – Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

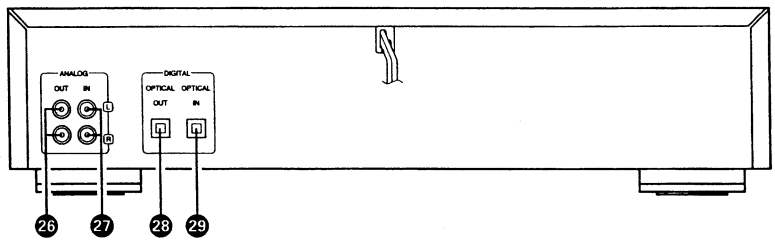


12. Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
14. Cleaning – The appliance should be cleaned only as recommended by the manufacturer.
15. Power Lines – An outdoor antenna should be located away from power lines.
16. Outdoor Antenna Grounding – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.
17. Nonuse Periods – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
18. Object and Liquid Entry – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
19. Damage Requiring Service – The appliance should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled into the appliance; or
    C. The appliance has been exposed to rain; or
    D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
    E. The appliance has been dropped, or the enclosure damaged.
20. Servicing – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

FRONT PANEL
FRONTPLATTE
PANNEAU AVANT
PANNELLO FRONTALE
VOORPANEEL



REAR PANEL
RÜCKWAND
PANNEAU ARRIERE
IL PANNELLO POSTERIORE
ACHTERPANEEL



IMPORTANT TO SAFETY

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:

1. **Handle the power supply cord carefully**
   Do not damage or deform the power supply cord. If it is damaged or deformed, it may cause electric shock or malfunction when used. When removing from wall outlet, be sure to remove by holding the plug attachment and not by pulling the cord.
2. **Do not open the top cover**
   In order to prevent electric shock, do not open the top cover.
   If problems occur, contact your DENON DEALER.
3. **Do not place anything inside**
   Do not place metal objects or spill liquid inside the MiniDisc recorder.
   Electric shock or malfunction may result.

Please, record and retain the Model name and serial number of your set shown on the rating label.

Model No. DMD-1300 Serial No._____

NOTE:

This MiniDisc recorder uses the semiconductor laser. To allow you to enjoy music at a stable operation, it is recommended to use this in a room of 10°C (50°F) – 35°C (95°F).

- **Place of installation**
  To ensure sufficient ventilation, leave a space of at least 10 cm between the front, sides and back of the unit and walls or other objects which may obstruct ventilation.

CAUTION:

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THE MINIDISC RECORDER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED SERVICE PERSONNEL.

Thank you for purchasing this DENON MiniDisc recorder. Please read the operating instructions thoroughly in order to acquaint yourself with the MiniDisc recorder and achieve maximum satisfaction from it.

Please check to make sure the following items are included with the main unit in the carton:

(1) Operating Instructions 1
(2) Connection Cord 2
(3) Remote Control Unit (RC-264) 1
(4) R6P (AA) Dry Cell Battery 2

— TABLE OF CONTENTS —

1 Features 4
2 Cautions on Handling 4
3 About MiniDiscs 4
4 Connections 5
5 Part Names and Functions 5, 6
6 Remote Control Unit 7
7 Normal Playback 8
8 Various Playback Functions ..... 8 ~ 11
1. Playing a certain track 8
2. Finding the desired position while listening to the sound 8
3. Finding the beginnings of tracks during playback 9
4. Stopping playback temporarily 9
5. Playing tracks in a certain order 9
6. Playing in random order 10
7. Playing repeatedly 10, 11
9 Recording 11, 12
10 Various Recording Functions 13
1. Adding track numbers during recording 13
2. Stopping recording temporarily 13
11 Timer Playback and Recording 13, 14
12 Editing ..... 14 ~ 19
13 Messages 19
14 System Limitations 20
15 Troubleshooting 20
16 Main Specifications 20

1 FEATURES

The DMD-1300 is an audio device using the MiniDisc format. Recording is possible for up to 74 minutes. Operation is the same as with regular compact discs (CDs).

1. **Clear sound quality**
   Digital recording provides clear playback sound.
   Also, a "ASLC" (ADVANCED Super Linear Converter) is used for playback, increasing musical expression particularly when the volume is low.
2. **Abundant playback functions**
   Programmed playback, random playback, all track repeat, single track repeat, etc.
3. **Numerous editing functions**
   Editing functions for dividing, combining and moving tracks make it possible to freely manipulate recorded discs, and disc and track titles can be added. These functions make it easy to create original discs.
4. **Sampling rate converter**
   Sources with different sampling frequencies, such as DATs and satellite broadcasts (32 kHz and 48 kHz), can be recorded digitally.
5. **Timer recording and playback**
   A timer (not included) can be used for timer recording and playback.

2 CAUTIONS ON HANDLING

Installation
Do not place a TV set (even a small one) or other object on top of the DMD-1300.

When receiving FM, AM and TV broadcasts
If the DMD-1300's power is turned on while receiving FM, AM or TV broadcasts, there may be noise in the sound or stripes on the TV picture. Keep the DMD-1300's power turned off when not using it.
The DMD-1300 uses digital technology, if an FM tuner is placed nearby, it may cause adverse effects, such as noise in the tuner's antenna cable, etc.
Be sure to use coaxial cables to connect the antenna and the tuner's antenna terminal.

When not using the DMD-1300

■ **Under normal circumstances**
- Always remove the disc and turn the power off.
- When leaving home for long periods of times such as for trips, be sure to unplug the power cord.

■ **When moving the DMD-1300**
- Do not subject the DMD-1300 to shocks.
- Always check that the disc has been removed and the connection cords disconnected before moving the DMD-1300.

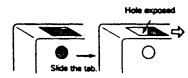
3 ABOUT MINIDISCS

■ MiniDiscs allow a maximum of 74 minutes of recording and playback in a compact size.
There are two types of MiniDiscs: those for playback only, and those for recording and playback.

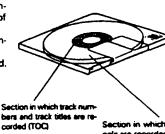
Playback only MiniDiscs
- These discs are for playback only. Commercially available music MDs are of this type.
- These are laser discs, like regular compact discs.
- Tracks on such discs cannot be edited.

Recordable MiniDiscs
- These are magneto-optical discs on which both recording and playback are possible. Recording is performed through magnetic modulation.
- Re-recording is also possible.

Accidental erasure prevention tabs
These tabs protect recordable MiniDiscs from accidental erasure.
To avoid accidentally erasing the recording, open the tab so that the hole is exposed. (See the diagram below.) When this is done, "Protected" is displayed if you attempt to record, erase or otherwise edit the disc, and the recording is protected. To record or erase the disc, set the tab back to its original position (with the hole covered).



Recording on discs
MiniDiscs include a section in which the audio signals are recorded and a section in which such data as track numbers and track titles are recorded.



■ **The TOC**
With MiniDiscs, after the audio signals are recorded, data used for checking the tracks (TOC — Table of Contents) is also recorded on the disc. This TOC data is used when playing the disc. In addition, editing is performed by rewriting the TOC data.
The TOC is written on the disc when the eject button is pressed to eject the disc and when the power button on the remote control unit is pressed to set the power to the standby mode.
When TOC writing starts, the "TOC" indicator flashes. Do not shake the main unit, press the main unit's power button or unplug the power cord while the TOC is being written. If the data is not recorded properly, it will not be possible to play the disc.

■ **Handling MiniDiscs**
MiniDiscs are housed in cartridges, so there is no need to worry about dirt and scratches. However, dirty or warped cartridges may cause malfunction. Be careful of the following to ensure long-lasting, high quality sound:
- Do not touch the disc surface directly.
- Do not open the shutter by hand.
- Do not place MiniDiscs in dusty, dirty or humid places.
- Do not place MiniDiscs in places exposed to direct sunlight or high temperatures.

Cleaning
Use a dry cloth to gently wipe dirt or dust off the cartridge. Do not apply excessive force.

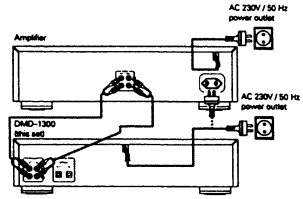
4 CONNECTIONS

1. Connecting the analog input and output jacks (analog connections)

• Use the included connection cords (pin-plug cords) to connect the analog input and output jacks.

① Connect the left (L) and right (R) analog output (ANALOG OUT) jacks on the DMD-1300 to the left (L) and right (R) tape input (tape playback) jacks on the amplifier.

② Connect the left (L) and right (R) analog input (ANALOG IN) jacks on the DMD-1300 to the left (L) and right (R) tape output (tape recording) jacks on the amplifier.



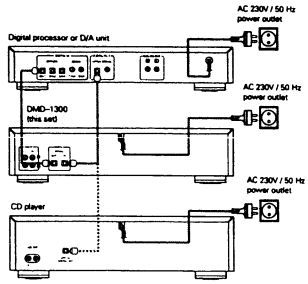
2. Connecting the digital input and output jacks (digital connections)

Use commercially available optical fiber cords to connect the digital input and output jacks.

① Connect the digital output (DIGITAL OPTICAL OUT) jack on the DMD-1300 to the digital optical input of a digital processor or D/A unit.

② Connect the digital input (DIGITAL OPTICAL IN) jacks on the DMD-1300 to the digital output (OPTICAL OUT) jacks on a CD player, digital processor or D/A unit.

• For information on optical fiber cords, contact your nearest Denon dealer.



NOTE:
- Do not plug in the power cord until all other connections have been made.
- Check the channels and be sure to connect left to left (L—white), right to right (R — red).
- Insert the plugs securely. Incomplete connections may result in noise.
- After unplugging the power cord, wait about 5 seconds before plugging it back in.
- Note that clamping the connection cords (pin-plug cords) together with the power cord may result in humming or noise.

5 PART NAMES AND FUNCTIONS

❶ POWER button
- The power turns on when the button is switched from the off position (▟▙) to the on position (▁▔).
- The power turns off when the button is switched from the on position (▁▔) to the off position (▟▙).
- When the button is in the on position (▁▔), the power button on the remote control unit can be used to switch the power between the on and standby modes. "OFF" is displayed when the power is in the standby mode.
- If a disc is inserted while in the standby mode, the power turns on automatically and the disc is drawn in. If a disc is inserted, the power turns on automatically when the play or eject button is pressed, and that operation is performed.

NOTE:
- This model is equipped with a backup function for storing the recorded or edited TOC (Table Of Contental data even when the power button is set to the off position (▟▙) or the power cord is unplugged.
  The data is backed up for 2 or 3 days. Write the TOC data on the disc immediately after recording or editing.
  If the backup data is lost, the recorded or edited data is erased and cannot be retrieved. (See Page 4.)

❷ EJECT button (⏏)
- Press this to eject the disc.

❸ REPEAT button
- Use this button to play a single track or all tracks repeatedly. (See Page 10 and 11.)

❹ RANDOM button
- Press this button to play the tracks in random order. (See Page 10.)

❺ TIME button
- Press this to switch the time display between the elapsed time and the remaining time per track.
- When pressed in the stop mode, the time display switches between the total playing time and the recordable time.
- When a title is displayed, press this button to switch to the time display.

❻ TITLE button
- Press this button to switch the time display to the title display.
- When pressed while a title is displayed, the title is scrolled.

❼ CHARACTER button
- Use this button when inputting titles to switch between capital letters, small letters and special letters.

❽ CLEAR button
- Press this to clear programmed tracks or title characters.

❾ EDIT button
- This button is used when inputting disc and track titles and for such editing operations as erasing, dividing, combining and moving tracks. (See Page 14 – 19.)
- Press this to enter titles.

❿ ENTER button
- Press this to enter the edited data.

⓫ Jog dial
- Use this dial to find the beginning of tracks and for editing.
- Use this dial to input letters when giving titles to tracks on the disc.

⓬ Headphones jack (PHONES)
- Use this jack to listen with headphones. (Headphones are not included.)

⓭ Headphones volume control (LEVEL)
- Use this to adjust the output level (volume) of the headphones jack (⓬ PHONES).

⓮ Input level adjustment control (INPUT LEVEL)
- Use this to adjust the analog input signal recording level.
- This control does not affect digital recording.

⓯ Record button (● REC)
- Press this button to record.
- The recording standby mode is set when the ● REC button is pressed alone.
- Press the play button (⓰ ▶ PLAY) while in the recording standby mode to start recording.
- To stop recording or to cancel the recording standby mode, press the stop button (⓱ ■ STOP).

⓰ Pause button (II PAUSE)
- Press this button to stop playback or recording temporarily.
- Press the play button (⓯ ▶ PLAY) to cancel the pause mode.

⓱ Stop button (■ STOP)
- Press this button to stop playback or recording.
- Press this button to clear the editing operation.

⓲ Manual search forward button (▶▶)
- Press this to search forward rapidly. (See Page 8.)
- When inputting titles, press this to move the cursor to the right.

⓳ Play button (▶ PLAY)
- Press this button to start playback or recording.
- Press this button during recording to add a track number.

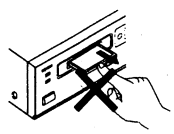
⓴ Manual search reverse button (◀◀)
- Press this to search backward rapidly. (See Page 8.)
- When inputting titles, press this to move the cursor to the left.

㉑ Display

㉒ REMOTE SENSOR
- Point the remote control unit (RC-264) towards this sensor when operating it.

㉓ Disc insertion slot
- When a disc is inserted here, it is automatically drawn into the set.
- Be sure to insert the disc in the proper direction.

★ Note on ejecting discs
- After pressing the eject button do not push the disc back in while it is being ejected. To reinsert the disc, wait until it comes fully out and stops, then press it back in.



㉔ Timer select switch (TIMER)
- Use this for timer recording or playback when using the DMD-1300 with a separately sold audio timer.
- Set the selector to the "OFF" position when not using the timer.

㉕ Input select switch (INPUT SELECT)
- Use this to select the input source for recording.
- The input source cannot be switched during recording. To do so, first set the recording standby or stop mode.

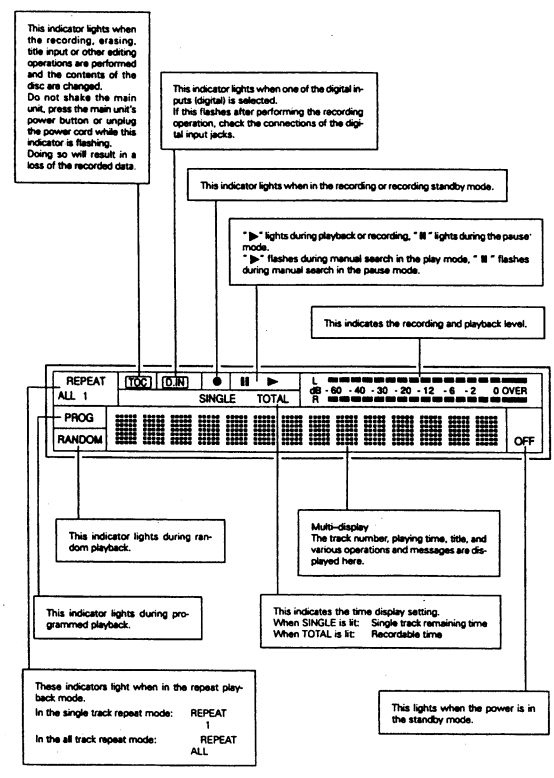
㉖ Analog output jacks (ANALOG OUT)
- When these jacks are connected to the tape input (TAPE-PB) jacks on an amplifier, the sound from the DMD-1300 can be heard through the speakers connected to the amplifier.

㉗ Analog input jacks (ANALOG IN)
- When these jacks are connected to the tape output (TAPE-REC) jacks on an amplifier, the sound of other components connected to the amplifier can be recorded on the DMD-1300. To do so, set the input selector (㉕ INPUT SELECT) to the "ANALOG" position.

㉘ Digital output jack (DIGITAL OPTICAL OUT)
- Digital data is output from this jack in the from of optical signals.
- When this jack is connected to the digital input (OPTICAL) jack on a digital processor or D/A unit, the sound from the DMD-1300 can be heard over the speakers.
- For details on the optical fiber cord used for connection, contact your nearest Denon Dealer.

㉙ Digital input jack (DIGITAL OPTICAL IN)
- Use this jack to input digital data.
- When connected to the optical digital output jack of a CD player, DAT deck, satellite broadcast tuner or another MD recorder, the sound from that unit can be recorded digitally on the DMD-1300. To do so, set the input selector (㉕ INPUT SELECT) to the "DIGITAL" position.
- For details on the optical fiber cord used for connection, contact your nearest Denon Dealer.

㉑ Display

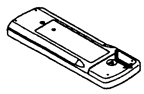


6 REMOTE CONTROL UNIT

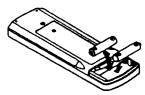
★ **The included remote control unit (RC-264) can be used to operate the DMD-1300 from a distance.**

Inserting the batteries

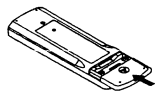
① Remove the remote control unit's back lid.



② Insert the two R6P (AA) batteries in the battery compartment, in the direction indicated by the marks inside the compartment.



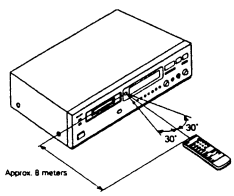
③ Put the back lid back on.



Cautions on batteries

- Use R6P (AA) batteries in the remote control unit.
- The batteries should be replaced with new ones after approximately one year, though this depends on the frequency with which the remote control unit is used.
- Even if the batteries are less than a year old, replace them with new ones if the remote control unit no longer operates even from a short distance from the main unit.
- When inserting new batteries, wait about two minutes after removing the old batteries before inserting the new ones.
- Be sure to set the batteries in the proper "⊕" and "⊖" directions, as indicated by the marks in the remote control unit's battery compartment.
- Remove the batteries when not using the remote control unit for long periods of time.
- To avoid explosions and fluid leakage:
  - Do not use one new battery with one old one.
  - Do not use two different types of batteries.
  - Do not short-circuit, disassemble, heat or dispose of batteries in flames.
- If the battery fluid should leak, wipe all the fluid off the battery compartment, then insert new batteries.

Using the remote control unit



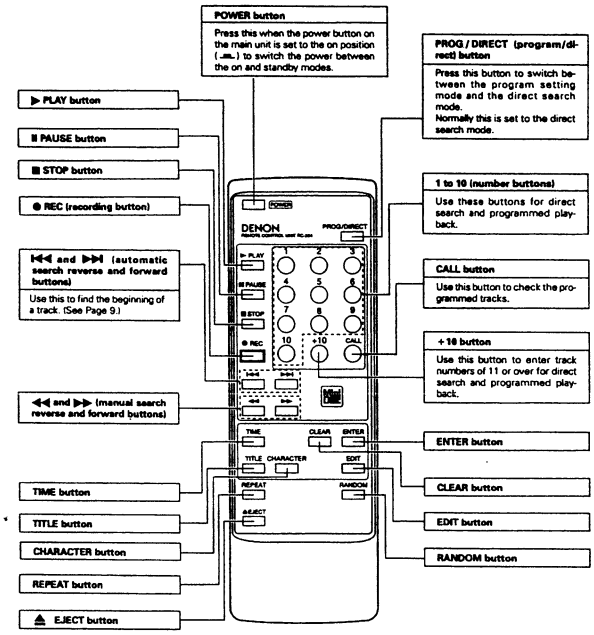
- When operating the remote control unit, point it at the main unit as shown in the diagram.
- The remote control unit can be operated from a direct distance of approximately 8 meters from the main unit. This distance will be shortened, however, if there are obstacles or when operated from an angle.
(The remote control unit will operate from a horizontal angle of up to about 30°.)

NOTE:

- The remote control unit may not operate if the remote sensor is exposed to direct sunlight or strong artificial light, or if there is an obstacle between it and the remote sensor.
- Do not press buttons on the main unit and on the remote control unit at the same time. Doing so will result in malfunction.

Names and Functions of Remote Control Unit Buttons

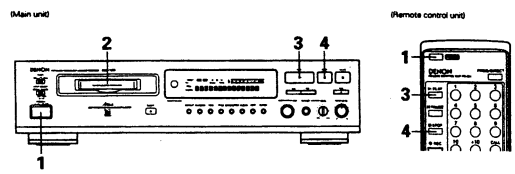
★ **Buttons not explained here function in the same way as the corresponding buttons on the main unit.**

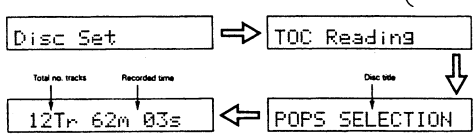
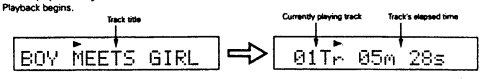


7 NORMAL PLAYBACK

1. Starting playback

First try playing the tracks in order.



1	Turn on the power.
2	Load the disc. • Insert the disc into the disc insertion slot in the direction indicated by the arrow on the top of the disc. The disc is drawn in automatically.  • The disc title is not displayed if no disc title has been input.
3	Press the play button (▶ PLAY). • Playback begins.  • The track title is not displayed if no track title has been input.

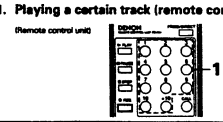
2. Stopping playback

4	Press the stop button (■ STOP). • Playback stops. • The stop mode is set automatically once all the tracks on the disc have been played.

8 VARIOUS PLAYBACK FUNCTIONS

In addition to normal playback, the DMD-1300 also offers the playback functions described below.

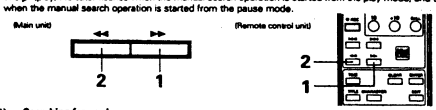
1. Playing a certain track (remote control unit only) ..... Direct Search



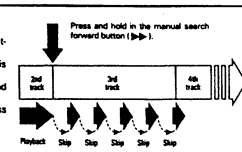
1	Use the number buttons (1 to 10) and the +10 button to input the number of the desired track. • For example: Press button [4] to listen to the 4th track, buttons [+10] and [2] to listen to the 12th track. Playback begins from that track.

2. Finding the desired position while listening to the sound ..... Manual Search

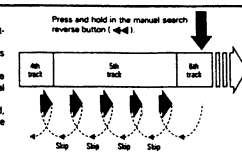
- Use this function to skip rapidly through the disc while listening to the sound.
This function comes in handy when you want to find a certain section within a long track.
- The manual search mode is set when one of the manual search buttons (▶▶ and ◀◀) is pressed and held in during playback. The disc moves slowly at first, then rapidly. Normal playback resumes when the button is released.
- The ▶ (play) indicator flashes when the manual search operation is started from the play mode, and the II (pause) indicator flashes when the manual search operation is started from the pause mode.



(1) Searching forward

1	During playback, press and hold in the manual search forward button (▶▶). • Normal playback resumes from the point at which the button is released. • Playback stops if the end of the last track on the disc is reached while pressing the manual search forward button (▶▶). • For high-speed forward search without hearing the sound, press the manual search forward button while in the pause mode. 

(2) Searching backward

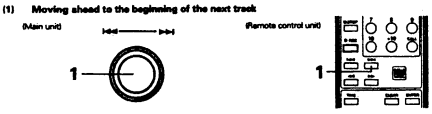
2	During playback, press and hold in the manual search reverse button (◀◀). • Normal playback resumes from the point at which the button is released. • Manual search stops and playback starts if the beginning of the first track on the disc is reached while pressing the manual search reverse button (◀◀). • For high-speed backward search without hearing the sound, press the manual search reverse button while in the pause mode. 

NOTE:

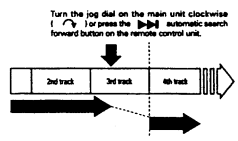
- There may be a slight break in the sound when returning to normal playback from the manual search mode.

3. Finding the beginnings of tracks during playback ..... Automatic Search

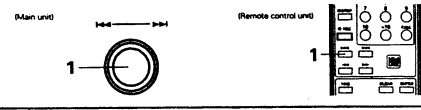
(1) Moving ahead to the beginning of the next track



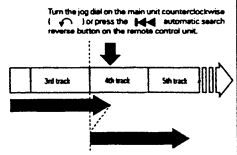
1	Either turn the jog dial on the main unit clockwise (↷) or press the ▶▶| automatic search forward button on the remote control unit. • During the search operation, turn the jog dial on the main unit clockwise (↷) again or press the ▶▶| automatic search forward button on the remote control unit again to move further on to the beginning of the following track.



(2) Moving back to the beginning of the current track

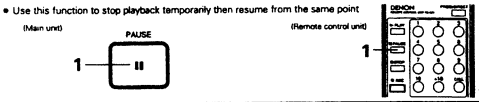


1	Either turn the jog dial on the main unit counterclockwise (↶) or press the |◀◀ automatic search reverse button on the remote control unit. • During the search operation, turn the jog dial on the main unit counterclockwise (↶) again or press the |◀◀ automatic search reverse button on the remote control unit again to move further back to the beginning of previous track.

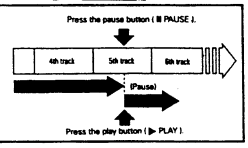


4. Stopping playback temporarily ..... Pause

• Use this function to stop playback temporarily then resume from the same point

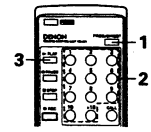


1	During playback, press the pause button (II PAUSE). • The pause mode is set. • Press the play button to resume playback from the point at which the pause mode was set.



5. Playing tracks in a certain order (remote control unit only) ..... Programmed Playback

(Remote control unit)



• Use this function to select certain tracks from the disc and program them to play in a certain order.
• Up to 25 tracks can be programmed.

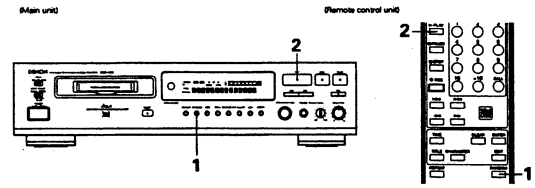
1	In the stop mode, press the PROG/DIRECT button. • The "PROG" indicator lights.
2	Use the number buttons and the +10 button to select the tracks for programmed playback. • For example, to program the 3rd, 12th and 7th tracks, press PROG/DIRECT , 3 , +10 , 2 and 7 .
3	Press the play button (▶ PLAY). • The tracks are played in the programmed order.

• To check the contents of the program, press the CALL button. The programmed tracks appear in the programmed order on the display each time the CALL button is pressed.
• To change the program, press the CLEAR button while in the stop mode, then program the desired track. The last programmed track is replaced with the newly input track.
• To clear the entire program, press the PROG/DIRECT or EJECT (⏏) button while in the stop mode.

NOTE:
• The single track repeat mode cannot be set during random playback.
• Programs with total playing times of over 256 minutes can be set, but the time will not be displayed properly.

6. Playing in random order ..... Random Playback

• Use this function to play all the tracks on the disc once in random order.

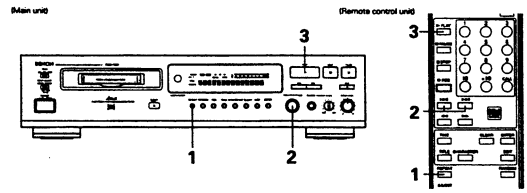


1	In the stop mode, press the RANDOM button. • The "RANDOM" indicator lights.
2	Press the play button (▶ PLAY). • During normal playback: Tracks are automatically played in random order. • During the all-track repeat mode: All the tracks are played once in random order, then repeated in another random order. • To cancel the random play mode, either set the stop mode or press the RANDOM button again.

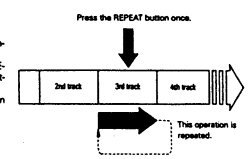
NOTE:
• The single track repeat mode cannot be set during random playback.
• The manual search buttons cannot be used for searching forward or backward during the all track random repeat mode.

7. Playing repeatedly ..... Repeat Playback

(1) Playing a single track repeatedly [Single Track Repeat]

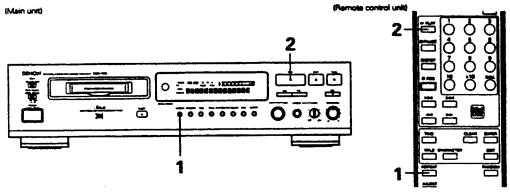


1	Press the REPEAT button once. • The "REPEAT" indicators light on the display and the single track repeat mode is set.
2	Either turn the jog dial on the main unit or use the automatic search buttons (|◀◀ and ▶▶|) on the remote control unit to select the track to be played repeatedly.
3	Press the play button (▶ PLAY). • Playback starts. • Once the selected track ends, it is played again from the beginning. • The single track repeat mode can also be set by pressing the REPEAT button during playback. The current track is played repeatedly. • To cancel the single track repeat mode, press the REPEAT button repeatedly until the "REPEAT" indicator turns off.



(2) Playing all tracks repeatedly [All Track Repeat]

(Main unit) (Remote control unit)



1	Press the REPEAT button twice. • The " REPEAT ALL " indicators light on the display and the all track repeat mode is set.
2	Press the play button (▶ PLAY). • The disc is played repeatedly. • The all track repeat mode can also be set by pressing the REPEAT button twice during playback. • If the REPEAT button is pressed during programmed playback, the tracks are played repeatedly in the programmed order. • To cancel the all track repeat mode, press the REPEAT button repeatedly until the "REPEAT" indicator turns off.

NOTE:
• The single track repeat mode cannot be set during programmed playback or random playback.

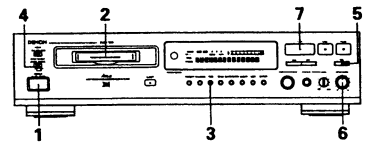
9 RECORDING

• When recording on an already recorded disc, recording automatically starts from the end of the section last recorded. When doing so, pay attention to the remaining time.
• To clear the entire content of the disc and record from the beginning, first erase the entire disc. (For instructions on erasing the entire disc, refer to " 12 Editing — (1) Erasing all tracks " on Page 15.)
• To record on a disc, make sure the accidental erasure prevention tab is closed and the hole is covered.

1. Starting recording

(1) Analog recording

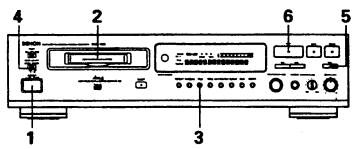
(Main unit)



1	Turn on the power.
2	Load the recordable MiniDisc on which you want to record.
3	When using an already recorded MiniDisc, press the TIME button to check the recordable time. • The time display switches between the total recorded time and the recordable time each time the TIME button is pressed.
4	Set the input select switch (INPUT SELECT) to the "ANALOG" position. • "Analog ATM On" or "Analog ATM Off" appears on the multi-display. • When the analog A.T.M. (Auto Track Marking) function is on (when "Analog ATM On" is displayed): Track numbers are automatically added when soundless sections (about 2 sec.) are detected in the recording input signal. • When the analog A.T.M. function is off (when "Analog ATM Off" is displayed): Track numbers are not automatically added. (For instructions on adding track numbers, refer to " 12 Editing — (2) Dividing tracks " on Page 16.) "Analog ATM On" or "Analog ATM Off" is displayed. Analog ATM On
5	Press the record button (● REC). • The recording standby mode is set.
6	Use the INPUT LEVEL control to adjust the recording level. • Adjust the INPUT LEVEL control so that the "OVER" indicator does not light even when the volume is loudest. After adjusting, set the source to be recorded to the standby mode.
7	Press the play button (▶ PLAY). • Recording starts. • Set the source to be recorded to the play mode.

(2) Digital recording

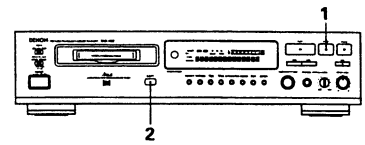
(Main unit)



1	Turn on the power.
2	Load the recordable MiniDisc on which you want to record.
3	When using an already recorded MiniDisc, press the TIME button to check the recordable time. • The time display switches between the total recorded time and the recordable time each time the TIME button is pressed.
4	Set the input select switch (INPUT SELECT) to the "DIGITAL" position. • "Digital In" appears on the multi-display. • If the " D.IN " indicator is flashing, check the connections to the digital input jacks. "Digital In" is displayed. Lights D.IN Digital In
5	Press the record button (● REC). • The recording standby mode is set.
6	Press the play button (▶ PLAY). • Recording starts. • Set the source to be recorded to the play mode.

2. Stopping recording

(Main unit)

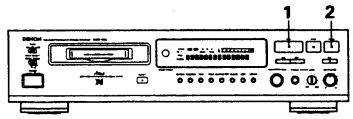


1	Press the stop button (■ STOP). • The stop mode is set automatically once the end of the recordable time is reached.
2	Press the EJECT button (⏏). • The TOC data is written and the disc is ejected. • When TOC writing starts, the " TOC " indicator flashes. Do not shake the main unit, press the main unit's POWER button or unplug the power cord while the TOC is being written. If the data is not recorded properly, it will not be possible to play the disc. • The TOC data can also be written by setting the power to the standby mode by pressing the power button on the remote control unit.

NOTE:
• When performing digital recording, there is no need to adjust the recording level. The position of the INPUT LEVEL control does not affect the recording level.
• When performing digital recording of CDs or MiniDiscs, the track numbers are recorded automatically. (Depending on the recorded content on the CD or MiniDisc and on the type of CD player, the track numbers may differ from those on the original CD or MiniDisc.)
• When recording on CDs or MiniDiscs, track numbers may be incremented by 1. If this happens, erase the unnecessary track numbers. (See Page 15.)
• The DMD-1300 is equipped with a sampling rate converter which converts the sampling frequency of sources whose sampling frequency is different from that of MiniDiscs (44.1 kHz), such as DATs and satellite broadcasts (32 kHz and 48 kHz), to 44.1 kHz when recording.
• When recording DATs digitally, track numbers are automatically added when soundless sections are detected when the sampling frequency is other than 44.1 kHz.
• Use analog recording to record sources that cannot be recorded digitally.
• During digital recording from CDs or MiniDiscs, the track number may not change if the same track is programmed twice in a row or if the single track repeat mode is set.
• Monaural recording is not possible on this recorder.
• It is not possible to make digital recordings of MiniDiscs which have already been recorded digitally. The DMD-1300 includes a serial copy management system. This system limits reproduction of digital signals on digital audio devices to "one generation". Use analog recording to record MiniDiscs originally recorded digitally.
• The auto mark function may not work properly when recording digital sources (BS/CS tuners or DATs) using digital connections.
  • The auto mark function may not work properly when there is much noise in the blank sections between tracks.
  • The auto mark function may be activated in the middle of a track if the signal level is low.
  If this happens, edit the disc after recording. (See Pages 16 and 17.)

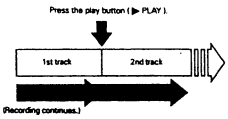
10 VARIOUS RECORDING FUNCTIONS

(Main unit)



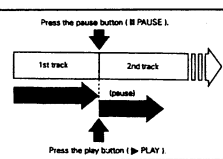
1. Adding track numbers during recording

- Track numbers can be added during recording regardless of the recording mode (Analog ATM on/off, Digital).

1	During recording, press the play button (▶ PLAY). • When the play button (▶ PLAY) is pressed during recording, a track number is added at that point. • It is not possible to add another track number less than 3 seconds after a track number has been added.	

2. Stopping recording temporarily

- Recording can be stopped temporarily then resumed from the same point.

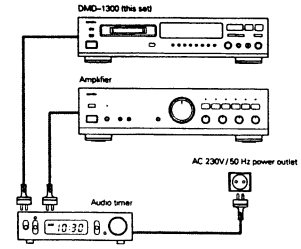
2	During recording, press the pause button (⏸ PAUSE). • When the pause button (⏸ PAUSE) is pressed during recording, the pause mode is set at that point and the track number changes. • Press the play button (▶ PLAY) to resume recording.	

NOTE:
- The TOC is written on the disc when the eject button is pressed to eject the disc and when the power button on the remote control unit is pressed to set the power to the standby mode.
- After recording, press the EJECT button (⏏) to record the TOC data before performing other operations.
- The TOC indicator flashes while the TOC data is being recorded. Do not shake the main unit, press the main unit's POWER button or unplug the power cord while the TOC is being written. If the data is not recorded properly, it will not be possible to play the disc.

11 TIMER PLAYBACK AND RECORDING

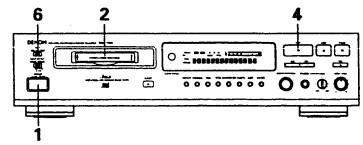
- A separately sold audio timer can be used to start playback or recording at a specific time.
- Also refer to the operating instructions for the audio timer and amplifier.

1. Connections



2. Timer playback

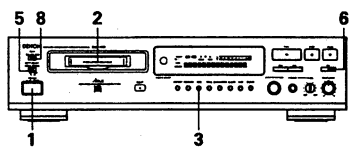
(Main unit)



1	Turn on the power of the DMD-1300 and the connected components.
2	Load the MiniDisc for timer playback into the DMD-1300.
3	Set the amplifier's input selector to "MD".
4	Press the play button (▶ PLAY). • Play the disc to check the volume.
5	Set the audio timer for the desired time.
6	Set the DMD-1300's timer select switch (TIMER) to "PLAY".
7	Press the power button on the remote control unit to set the power to the standby mode. Turn the audio timer ON. • When the set time is reached, the power of the various components turns on automatically and playback begins from track one.

3. Timer recording

(Main unit)



1	Turn on the power of the DMD-1300 and the connected components.
2	Load the recordable MiniDisc for timer recording into the DMD-1300.
3	When using an already recorded MiniDisc, press the TIME button to check the recordable time.
4	Set the input selector button on the amplifier or receiver to the source to be recorded.
5	Set the input select switch (INPUT SELECT) on the DMD-1300 to the source to be input.
6	Press the record button (● REC). • Set the recording pause mode and check the recording level.
7	Set the audio timer for the desired time.
8	Set the DMD-1300's timer select switch (TIMER) to "REC". • When the set time is reached, the power turns on and recording begins.
9	Press the power button on the remote control unit to set the power to the standby mode. Turn the audio timer ON. • When the set time is reached, the power of the various components turns on automatically and recording begins.

NOTE:
- **Be sure to keep the main unit's power button in the on position when performing timer playback and recording. Timer playback and recording will not work if the power button is in the off position.**
- **The recording made using timer recording is stored on the disc the next time the power is turned on. During this, the TOC indicator flashes. Do not shake the main unit, press the main unit's power button or unplug the power cord while the "TOC" is flashing.**
- **To operate the DMD-1300 again after timer recording, first eject the disc, then reload it.**
- **The recording made using timer recording may be cleared if the DMD-1300's power is not turned on for 2 or 3 days. Be sure to turn on the DMD-1300 within 2 or 3 days.**
- Be sure to set the DMD-1300's timer select switch (TIMER) to the "OFF" position when not using timer playback or recording.
- It takes several seconds from the time the timer recording start time is reached until the power is turned on and recording actually starts. Take this into consideration when setting the timer's start and stop times.
- The recordable time may be shortened by several seconds when using timer recording on discs on which editing (erasing tracks, etc.) has been performed repeatedly.
- The main unit's power and time buttons and the recording level control (for analog recording) can be operated during timer recording.
- Only the TIME button and the POWER button will function during timer recording.
- To stop recording during timer recording, set the timer select switch (TIMER) to "OFF", then press the stop button (■ STOP).
- Timer recording is not possible when the disc's accidental erasure prevention tab is open or when the disc is already full ("Disc Full").

12 EDITING

The editing functions can be used to add track numbers, combine tracks, erase unwanted sections, etc.
It is also possible to give titles to discs and tracks.
Use the editing functions to get the best of the excellent operability that MiniDiscs offer.

1. Editing

The DMD-1300 is equipped with the following four editing functions:

Editing functions

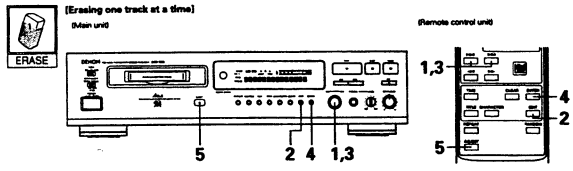
ERASE	DIVIDE	COMBINE	MOVE
• Erasing single tracks • Erasing all tracks	• Dividing tracks	• Combining track	• Moving tracks

These four editing functions can be combined for a variety of editing possibilities.

- When editing or adding titles, close the accidental erasure prevention tab to cover the hole.

(1) Erasing tracks

[Erasing one track at a time]

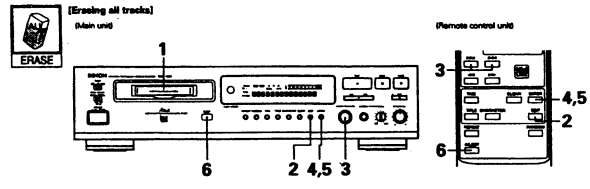


1	In the stop mode, display the number of the track to be erased. • Either turn the jog dial on the main unit or use the automatic search buttons (⏮ and ⏭) on the remote control unit to display the number of the track to be erased. • This step is unnecessary when you want to erase the currently playing or paused track.
2	Press the EDIT button. • "Edit Mode" is displayed.
3	Either turn the jog dial on the main unit or press one of the automatic search buttons (⏮ and ⏭) on the remote control unit. • Display "Track Erase?".
4	Press the ENTER button to erase the track. • "Complete" is displayed. • The stop mode is set once the operation is completed. • During the pause mode, that track is erased. • When a track is erased during the pause mode, the stop mode is set after the track is erased. • When a track is erased, the numbers of the tracks following that track are all decreased by one.
5	Press the EJECT button (⏏). • The TOC data is written and the disc is ejected. • When TOC writing starts, the " TOC " indicator flashes. Do not shake the main unit, press the main unit's POWER button or unplug the power cord while the TOC is being written. If the data is not recorded properly, it will not be possible to play the disc. • The TOC data can also be written by setting the power to the standby mode by pressing the power button on the remote control unit.

- When erasing two or more tracks, start from the track with the largest number, since the numbers of the following tracks decrease when a track is erased.
- To cancel the erasing procedure, press the STOP or CLEAR button before step 4 above to display "Track Erase?".

NOTE:
- Once a track is erased, it can no longer be retrieved. Be sure to check the track before erasing it.

[Erasing all tracks]

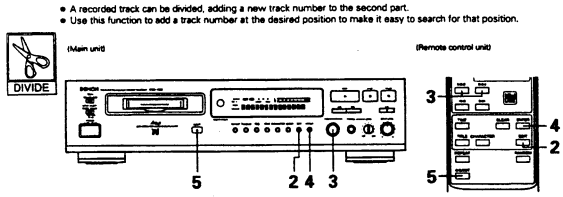


1	Load the disc you want to erase.
2	In the stop mode, press the EDIT button. • "Edit Mode" is displayed.
3	Either turn the jog dial on the main unit or press one of the automatic search buttons (⏮ and ⏭) on the remote control unit. • Display "ALL Erase?".
4	Press the ENTER button. • The "Erase OK?" message appears.
5	Press the enter button to erase the track.
6	Press the EJECT button (⏏). • The TOC data is written and the disc is ejected. • When TOC writing starts, the " TOC " indicator flashes. Do not shake the main unit, press the main unit's POWER button or unplug the power cord while the TOC is being written. If the data is not recorded properly, it will not be possible to play the disc. • The TOC data can also be written by setting the power to the standby mode by pressing the power button on the remote control unit.

- When the all erase function is used, both the tracks and the disc title are erased.
- To cancel the erasing procedure, press the STOP or CLEAR button before step 5 above to display "ALL Erase?" or "Erase OK?".

(2) Dividing tracks

- A recorded track can be divided, adding a new track number to the second part.
- Use this function to add a track number at the desired position to make it easy to search for that position.



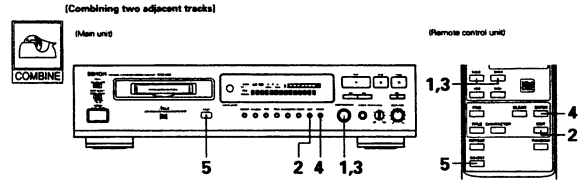
1	Set the pause mode at the position at which you want to divide the track.
2	Press the EDIT button. • "Edit Mode" is displayed.
3	Either turn the jog dial on the main unit or press one of the automatic search buttons (⏮ and ⏭) on the remote control unit. • Display "Divide?".
4	Press the ENTER button to divide the track.
5	Press the EJECT button (⏏). • The TOC data is written and the disc is ejected. • When TOC writing starts, the " TOC " indicator flashes. Do not shake the main unit, press the main unit's POWER button or unplug the power cord while the TOC is being written. If the data is not recorded properly, it will not be possible to play the disc. • The TOC data can also be written by setting the power to the standby mode by pressing the power button on the remote control unit.

- If a titled track is divided, both parts will have the same title.
- To put a divided track back together, see "(3) Combining tracks" on Page 16.
- To cancel the dividing procedure, press the STOP or CLEAR button before step 4 above.

(3) Combining tracks

- Use this function to combine two adjacent tracks.

[Combining two adjacent tracks]

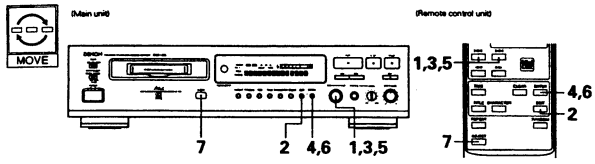


1	In the stop mode, display the number of the second of the adjacent tracks. • Either turn the jog dial on the main unit or use the automatic search buttons (⏮ and ⏭) on the remote control unit to display the number of the second track.
2	Press the EDIT button. • "Edit Mode" is displayed.
3	Either turn the jog dial on the main unit or press one of the automatic search buttons (⏮ and ⏭) on the remote control unit. • Display "Combine?".
4	Press the ENTER button to combine the tracks.
5	Press the EJECT button (⏏). • The TOC data is written and the disc is ejected. • When TOC writing starts, the " TOC " indicator flashes. Do not shake the main unit, press the main unit's POWER button or unplug the power cord while the TOC is being written. If the data is not recorded properly, it will not be possible to play the disc. • The TOC data can also be written by setting the power to the standby mode by pressing the power button on the remote control unit.

- To divide tracks that have been combined, see "(2) Dividing tracks" on Page 16.
- Tracks can also be combined in the same way during the play or pause modes by pressing the EDIT button. In this case, the track at the point where ENTER button is pressed is combined with the previous track.
- The title of the combined track is the title of the first of the two tracks. If the first track has no title, the title of the second track is used.
- To cancel the combining procedure, press the STOP or CLEAR button before step 4 above.

NOTE:
- Tracks recorded from CDs or MiniDiscs using the digital inputs cannot be combined with tracks recorded using the analog inputs.
- It may not be possible to combine short tracks less than 15 seconds long.

(4) Moving tracks



1	In the stop mode, display the number of the track to be moved. • Either turn the jog dial on the main unit or use the automatic search buttons (⏮ and ⏭) on the remote control unit to display the number of the track to be moved.
2	Press the EDIT button. • "Edit Mode" is displayed.
3	Either turn the jog dial on the main unit or press one of the automatic search buttons (⏮ and ⏭) on the remote control unit. • Display "Move?".
4	Press the ENTER button. • Display "00TrMove 00Tr".
5	Either turn the jog dial on the main unit or use the automatic search buttons on the remote control unit to specify the number to which the track is to be moved.
6	Press the ENTER button to move the track.
7	Press the EJECT button (⏏). • The TOC data is written and the disc is ejected. • When TOC writing starts, the " TOC " indicator flashes. Do not shake the main unit, press the main unit's POWER button or unplug the power cord while the TOC is being written. If the data is not recorded properly, it will not be possible to play the disc. • The TOC data can also be written by setting the power to the standby mode by pressing the power button on the remote control unit.

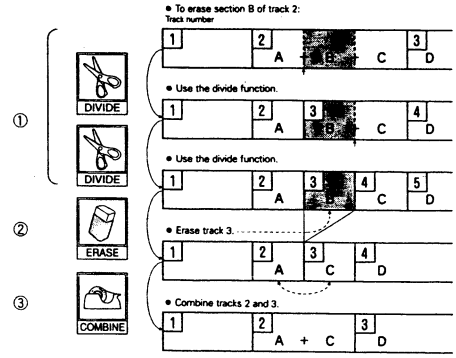
• To cancel the moving procedure, press the STOP or CLEAR button before step 6 above.

2. Examples of editing applications

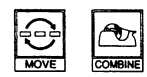
The four editing functions can be combined for a variety of editing possibilities. Here we give two examples. Use these as reference to make your own original discs.

[Erasing part of a track]

To erase part of a track, give a track number to the section you want to erase, then erase that track number.
① Isolate the section of the track you want to erase by giving it a track number. (Divide function)
② Erase the section to which you have given a track number. (Erase function)
③ Combine parts A and C of the original track. (Combine function)

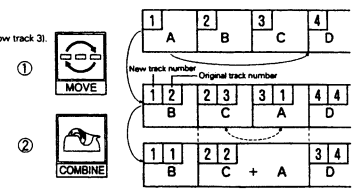


[Combining two non-adjacent tracks]



• Joining track 1 to the end of track 3:

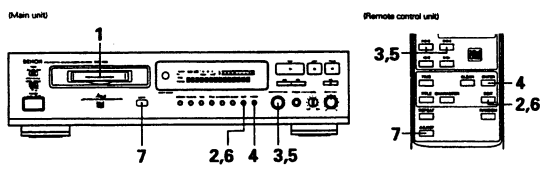
① Move track 1 behind track 3. (Move function)
② Combine track 3 (now track 2) with track 1 (now track 3). (Combine function)



3. Adding titles

★ Up to 100 characters can be input for the track and disc titles.

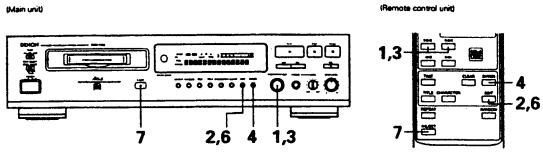
(1) Adding disc titles



1	Load the disc to which you want to give a title.
2	Press the EDIT button after the total number of tracks on the disc and the total playing time are displayed (in the stop mode). • "Edit Mode" is displayed.
3	Either turn the jog dial on the main unit or use the automatic search buttons (⏮ and ⏭) on the remote control unit to display "Disc Name In?".
4	Press the ENTER button. • The cursor flashes, indicating the title input standby mode.
5	Input the title. • Either turn the jog dial on the main unit or use the automatic search buttons (⏮ and ⏭) on the remote control unit to select the desired character. • Some characters that can be input on the DMD-1300 cannot be displayed on other models. • The shape of the cursor changes each time the CHARACTER button is pressed. [Explanation of cursor:] ..... Capital letter / number input mode ..... Small letter / number input mode ..... Special character input mode [Available characters and numbers] Capital letter / number input mode: ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789 Small letter / number input mode: abcdefghijklmnopqrstuvwxyz0123456789 Special character input mode: Space ! " # $ % & ' ( ) * +, –, . / : ; < = > ? @ [¥] _ ` {	} – • When the manual search forward button (▶▶) or the ENTER button is pressed, the selected character is set, and the unit is set to the input standby mode for the next character. • The cursor can be moved back by pressing the manual search reverse button (◀◀). Use this to correct input characters.
6	Press the EDIT button to enter the input title.
7	Press the EJECT button (⏏). • The TOC data is written and the disc is ejected. • When TOC writing starts, the " TOC " indicator flashes. Do not shake the main unit, press the main unit's POWER button or unplug the power cord while the TOC is being written. If the data is not recorded properly, it will not be possible to play the disc. • The TOC data can also be written by setting the power to the standby mode by pressing the power button on the remote control unit.

• To erase a character, move the cursor to that character then press the CLEAR button.
• To correct a character, first erase it, then input the correct character.

(2) Adding track titles



1	In the stop mode, either turn the jog dial on the main unit or use the automatic search buttons (⏮ and ⏭) on the remote control unit to display the track number.
2	Press the EDIT button. • "Edit Mode" is displayed. • In the play, pause or recording modes, press the EDIT button to give a title to the current track.
3	Either turn the jog dial on the main unit or use the automatic search buttons (⏮ and ⏭) on the remote control unit to display "Track Name In?"
4	Press the ENTER button. • The cursor flashes, indicating the title input standby mode.
5	Input the title • For instructions on inputting titles, see step 5 under "Adding disc titles" on Page 18.
6	Press the EDIT button to enter the input track title.
7	Press the EJECT button (⏏). • The TOC data is written and the disc is ejected. • When TOC writing starts, the " TOC " indicator flashes. Do not shake the main unit, press the main unit's POWER button or unplug the power cord while the TOC is being written. If the data is not recorded properly, it will not be possible to play the disc. • The TOC data can also be written by setting the power to the standby mode by pressing the power button on the remote control unit.

• In the play or recording mode, finish adding the title before the track ends. If the track changes, the characters that have been input up to that point are no longer valid.
• Characters input in the recording pause mode are cleared when the STOP button is pressed.

NOTE:
• Up to 100 characters can be input for the track and disc titles. "Name Full" is displayed if you attempt to input a 101st character.
• If the title operation is performed with a disc containing titles with over 100 characters input on another MiniDisc recorded, the characters over the 100th character are erased.
• A total of approximately 1700 characters can be input for all disc and track titles. "Name Full" is displayed if you attempt to input more characters.

13 MESSAGES

Messages may appear on the display while using the DMD-1300. The meanings of these messages are explained below.

Message	Meaning
TOC Reading	TOC is being read.
Blank Disc	Nothing is recorded on the loaded disc.
Complete	Editing is completed.
Copy Prohibit	The SCMS (Serial Copy Management System) prohibits digital copying of that source.
Digital Unlock	During digital recording, this indicates that signals are not being input properly due to incomplete connection of the digital input jacks, etc.
Disc Err*	Disc is scratched. No TOC is written on the MiniDisc or the data is defective.
Disc Full	There is no remaining time on the disc. There are already 254 tracks on the disc.
Impossible	This indicates that the editing operation is not possible.
No Name	This means that no title has been input.
No Track	The disc has a title but no tracks on it.
Playback Only	This appears when you try to record or edit on a disc for playback only.
Protected	The disc is protected against accidental erasure.
Name Full	100 characters have already been input for the disc or track title. Approx. 1700 characters have already been input for the disc and track titles.
TrackProtected	This track cannot be edited.
Disc ?	Data is defective. MiniDisc does not conform to standards.
TOC Err*	Disc is scratched. TOC data cannot be red. MiniDisc does not conform to standards.
Can't REC	Proper recording was not possible due to shocks or scratched disc.
Temp Over	Temperature is too high.
Defect	Recording is interrupted due to scratched disc.
Mech Err*	MiniDisc is not functioning properly.
Not Audio	Non-audio data is recorded on the disc.
UTOC W Err	Proper TOC data could not be created due to scratched disc.
UTOC Err*	TOC data recorded on the disc is not to MiniDisc standards or cannot be read.
Focus Err	Disc is scratched. Player is being used in a shaky, unstable place.

("*" indicates a letter or character.)

14 SYSTEM LIMITATIONS

The recording method used on MiniDisc (MD) systems is different from conventional recording methods. Because of this, there are several system limitations.
Note that the following are not malfunctions.

1. Track number limitations

• Up to 254 tracks can be recorded on blank discs or discs with no tracks on them when the tracks are recorded in order starting from track 1. If a disc has been edited repeatedly, however, it may not be possible to record 254 tracks on the disc.
• If there is emphasis data or other signals between tracks during digital recording, this will be treated as a break within the track (the track number will not change), and recording may not be possible, regardless of the recording time or number of tracks.

2. Recording limitations

• If 254 tracks are already recorded on the disc, no further recording is possible, even if the recorded time is less than the maximum recordable time.
• Recording is performed in units of about 2 seconds. About 2 seconds of disc space is used even if the section is less than 2 seconds long. Thus, the actual recordable time becomes shorter.
• If there are scratches on the disc, recording is not possible in the scratched sections, and the recordable time decreases accordingly. ("Defect" is displayed during recording and the number of tracks on the MiniDisc is automatically increased.)
• When digitally recording CDs, depending on the recording on the CD blank sections of several seconds may be created and the number of tracks may differ from the number on the original CD.
• When the analog A.T.M. function is on and track numbers are added automatically, the track numbers may not be added properly, depending on the original recording.
• In some cases, the remaining time may not decrease when short tracks are erased. This is because sections of 12 seconds and less are ignored when displaying the remaining time on the MD.

3. Editing limitations

• In some cases it is not possible to combine short tracks created through editing.
• There may be breaks in the sound during manual search on MiniDiscs which have been recorded or edited repeatedly.

15 TROUBLESHOOTING

Check the following before assuming there is a problem with the set.
■ Are connections proper?
■ Are you operating as described in these operating instructions?
■ Be sure to check that the main power switch on the rear panel is turned on.
If the set does not seem to be operating properly, check the items listed on the table below.
If the cause of the problem cannot be found, the set may be malfunctioning. Immediately turn off the power and unplug the power cord, then contact your store of purchase or your nearest Denon dealer.

Problem	Cause	Measure	Page
Set does not operate.	• No disc is loaded. • Disc is damaged or dirty	• Load a disc. • Replace with another disc.	8 —
Disc does not play.	• Connections are wrong. • Nothing is recorded on the disc. ("Blank Disc" or "No Track" is displayed.)	• Check the connections. • Replace with a recorded disc.	5 19
Recording is not possible.	• Disc is protected. ("Protected" is displayed.)	• Move the disc's accidental erasure protection tab to cover the hole.	4, 19
	• There is no remaining time on the disc. ("Disc Full" is displayed.)	• Replace the disc. If there are any sections you do not need, erase them to increase the recording time.	19
	• 254 tracks are already recorded on the disc. ("Disc Full" is displayed.)	• Replace the disc. If there are any tracks you do not need, erase them to increase the recording time.	19
	• You are attempting to digitally record a digitally recorded source. (See the description of the SCMS system.) ("Copy Prohibit" is displayed.)	• Use analog recording.	11, 19
	• The input selector (INPUT SELECT) is not set properly.	• Check the recording input mode.	11
	• The INPUT LEVEL control is turned down.	• Adjust the INPUT LEVEL control (for analog recording only).	11

16 MAIN SPECIFICATIONS

Type: MiniDisc digital audio system
Wow & flutter: Below measurable limits (±0.001% W. peak or less)
Sampling frequency: 44.1 kHz
Recording method: Magnetic modulation overwriting
Light source: Semiconductor
Power supply: AC 230 V, 50 Hz (DMD-1300 Europe model, DMD-1550G Asia model)
AC120V, 60Hz (DMD-1300 U.S.A. model)
Power consumption: 14 W
Maximum external dimensions: 434 (width) x 100 (height) x 285 (depth) mm
(DMD-1300 Europe model, U.S.A. model)
470 (width) x 100 (height) x 285 (depth) mm
(DMD-1550G Asia model)
(including feet, controls and terminals)
Weights 4.0 kg (DMD-1300 Europe model, U.S.A. model)
4.9 kg (DMD-1550G Asia model)

■ **Remote control unit:** (RC-264)
Remote control method: Infrared pulse
No. buttons: 31
Power supply: DC 3V using two R6P (AA) batteries
Maximum external dimensions: 60 (width) x 177 (height) x 18 (depth) mm
Weight: 100 g (including batteries)

● For improvement purposes, specifications and design are subject to change without notice.

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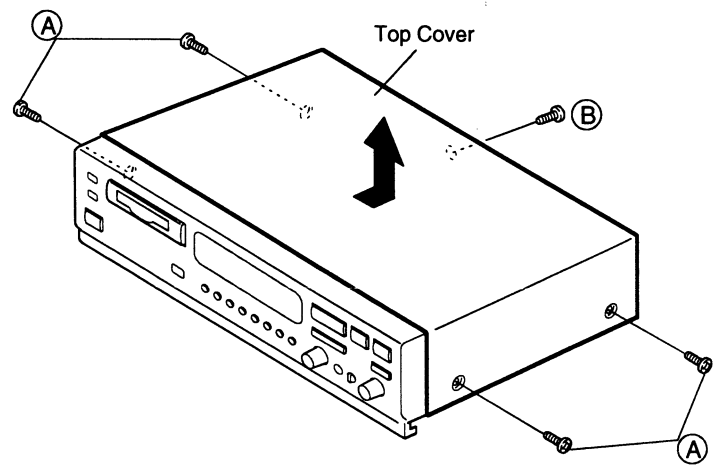
DISASSEMBLY

(To reassemble reverse disassembly)

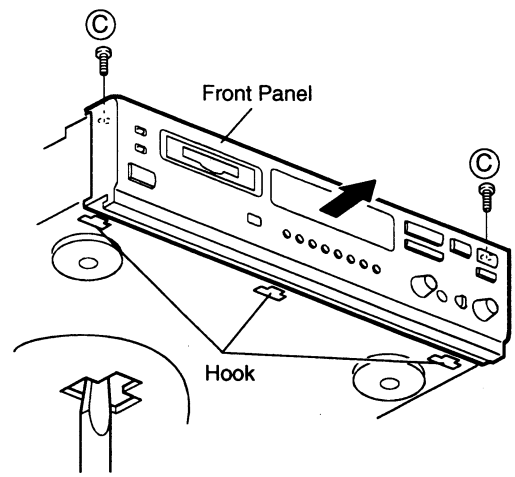
● Top Cover

1. Remove 4 screws Ⓐ on both sides and one screw Ⓑ on the rear side.
2. Lift the Top Cover in the arrow direction.



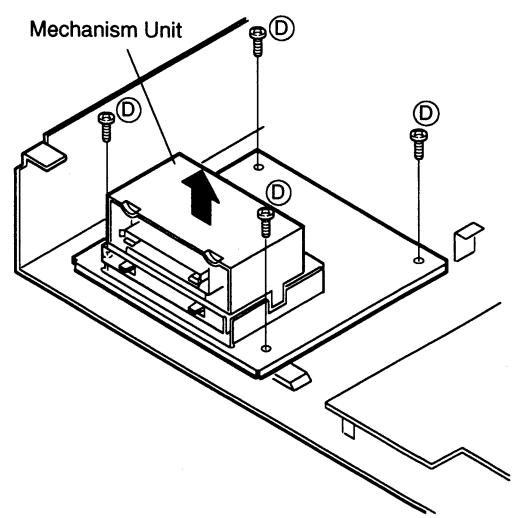
● Front Panel

1. Remove 2 screws Ⓒ on the top of Front Panel.
2. While unhooking places on the bottom of Front Panel, disassemble the Front Panel toward arrow direction.

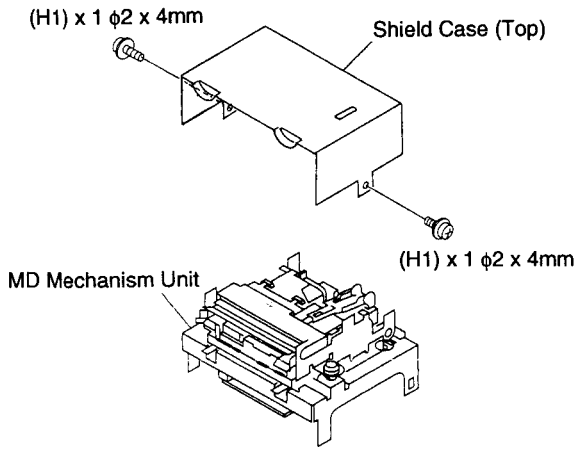


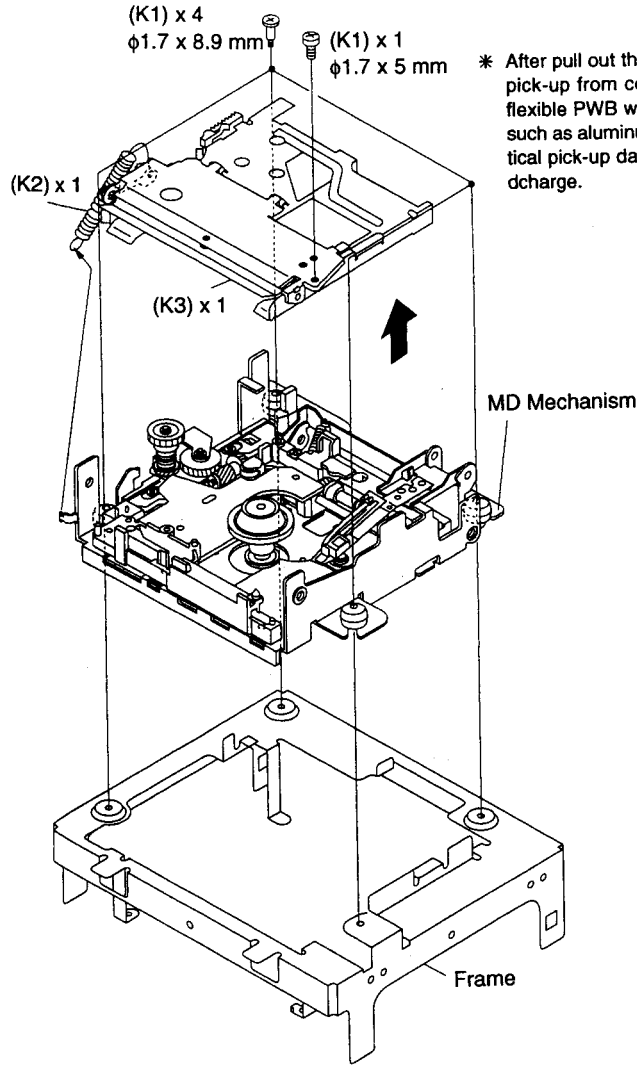
● Mechanism Unit

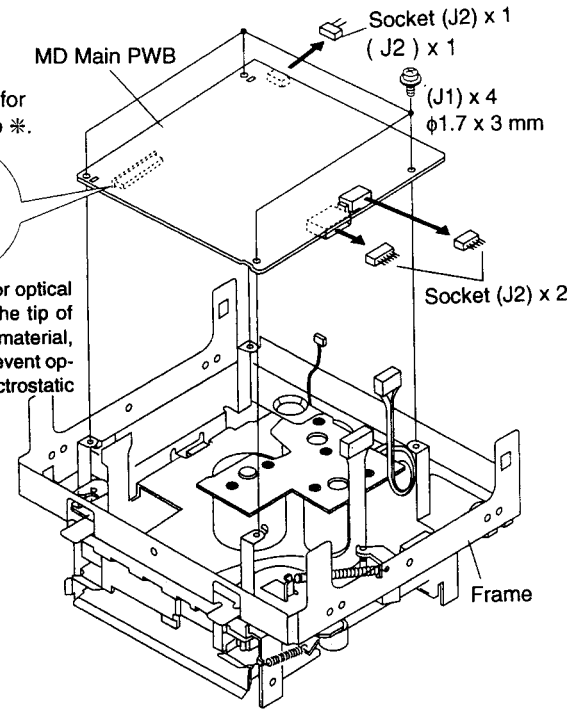
1. Remove 4 screws Ⓓ mounting the mechanism.
2. Disassemble the Mechanism Unit in the arrow direction.



● Mechanism Section







✳ After pull out the flexible PWB for optical pick-up from connector, wrap the tip of flexible PWB with a conductive material, such as aluminum foil, etc. to prevent optical pick-up damage due to electrostatic dcharge.

ADJUSTMENT

● PREPARATION

Required Test Disc

	Type	Test Disc
1	High reflection disc	TGYS1 (SONY) for playback
2	Low reflection disc	Mini disk for recording
3	—	Transparent disc for head alignment

Required Extension Cable

	Type
1	Extension P.W.B.
2	2-Pin extension coonector
3	26-Pin flat cable
4	5-Pin extension connector
5	5-Pin flat cable
6	24-Pin flat cable
7	8-pin flat cable

● MAGNETIC HEAD MOUNTING POSITION

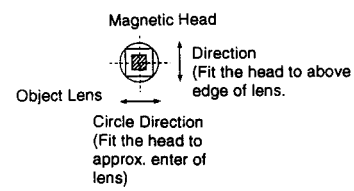
* Be sure to adjust the mounting position whenever the magnetic head or optical pick-up is replaced.
* In order easier to perform the mounting position adjustment, place the pick-up in the center position.

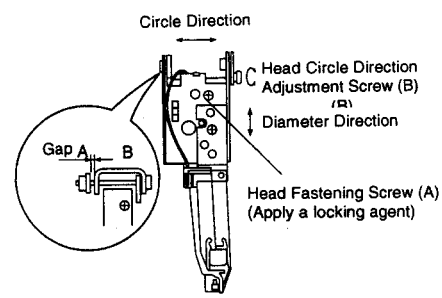
1. Set the transparent disc (Test disc 3).
2. Lower the head up-shift arm manually to lift the head.
3. View the unit from the above to confirm that the object lens of pick-up coincides with the head.

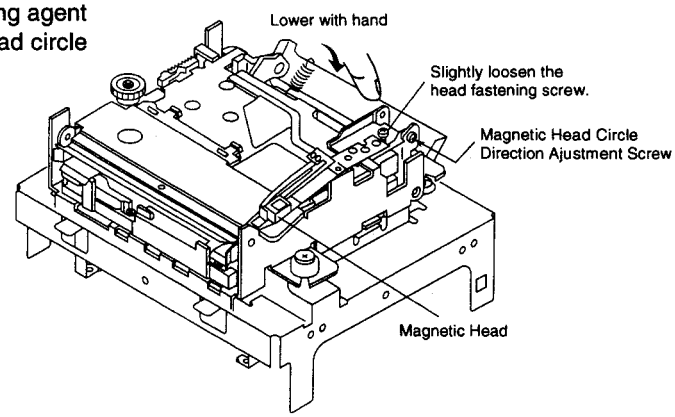
   Diameter direction: Slightly loosen the head fastening screw (A) and slide the head fixture to diameter direction so as the head coincides within the object lens of pick-up.

   Circle direction: Adjust the head circle direction adjustment screw (B) to fit the head within the object lens.

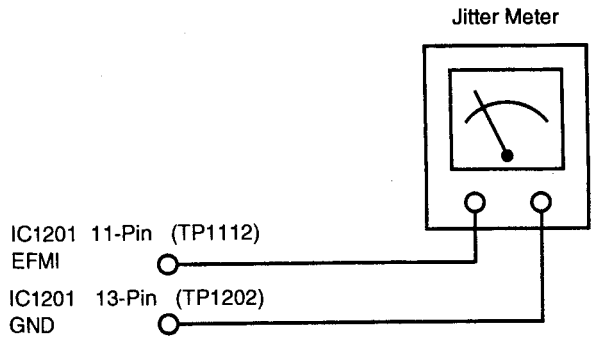
4. Confirm a gap as in figure and ascertain the head that is moving smoothly.
5. After complete adjustment, apply a screw locking agent on head fastening screw (A) and adjusted head circle direction screw (B).





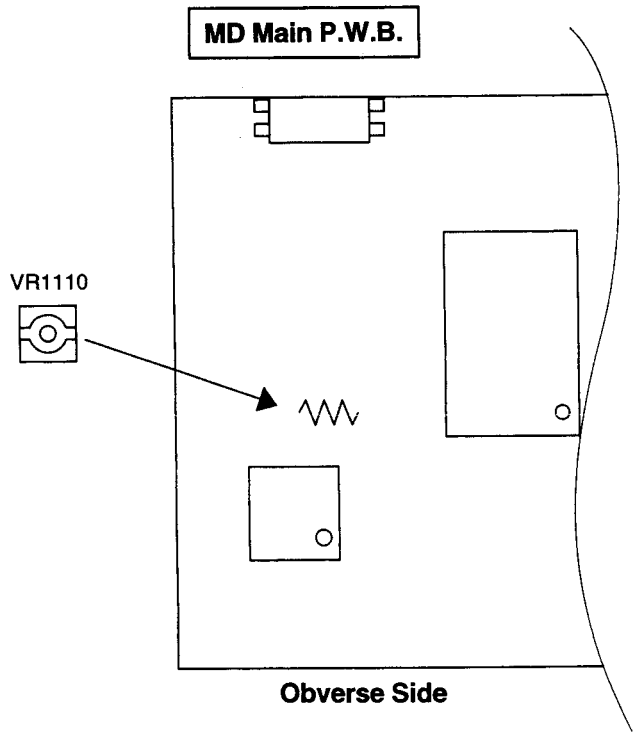


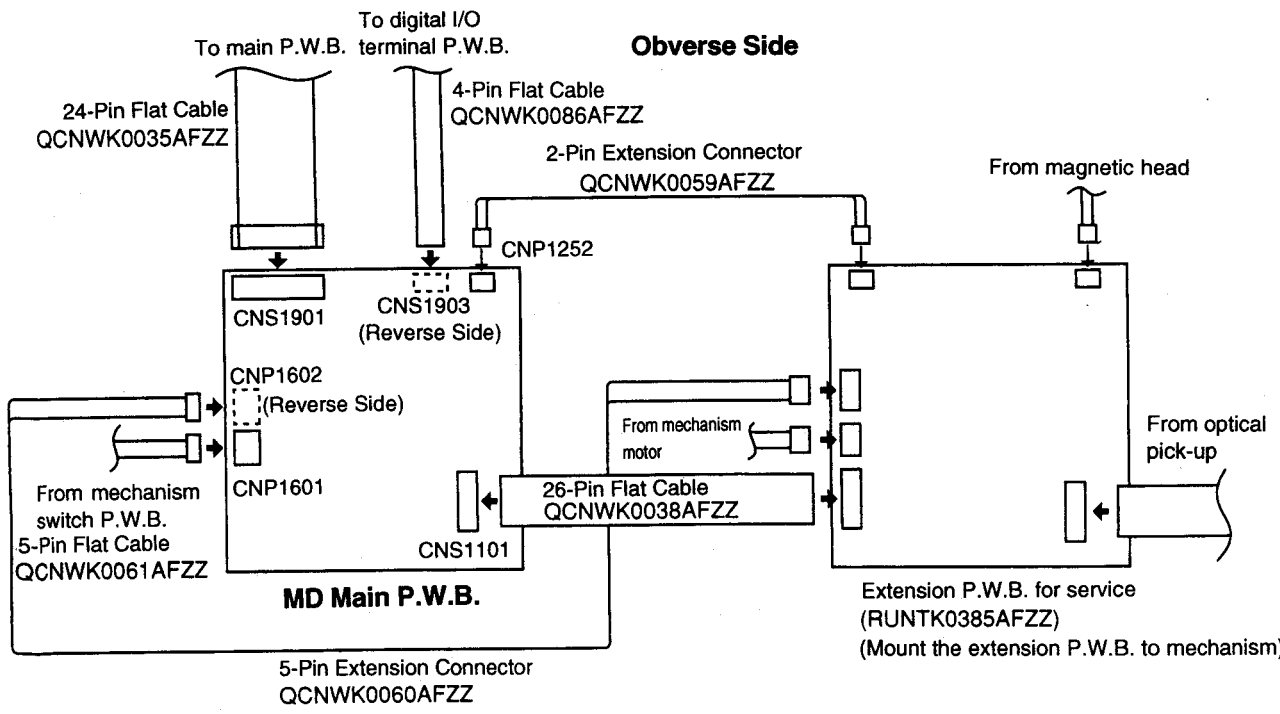
● ADJUSTMENT AND CONFIRMATION



Jitter connection diagram

Load a low reflection disc and playback,
confirm that the jitter reading is less than 35 ns.





● DETAILED DESCRIPTION OF ERROR INDICATION

Error Indication	Content of Error	Remedy
Can't Rec	• DEFECT occured continuously 10 times during REC-PLAY. • Possible record cluster becomes 0 due to DEFECT occurrence during REC-PLAY. • Unable to read address. However repeating try, unable to enter REC mode in 20 seconds.	• Is there any scratch, dust, finger print, black spot, etc. on the disc? Check for eccentricity, warp, etc. of disc.
Impossible	• With the channel status of digital signal from D-IN during REC-PAUSE or REC-PLAY judged as follows. (1) Other than audio. (2) Other than public use. (3) Copy NG by reverse of CD COPY bit. • Respective edit condition does not satisfy in each edit function	• Check the CD for copy inhibit. (Example: CD-R, etc.) • As operation is wrong, do it properly.
Digital Unlock	• Becomes lower against the digital signal input from D-IN during. REC-PAUSE, REC-PLAY or CD FUNC playback. (1) Digital IN PLL is UNLOCKED. (2) Locked other than FS=44.1 kHz.	• Check for abnormality in D-IN signal line. • Is 8.4 MHz clock from MD to CD normal?
Disc Full	• No registering area for program number or character information. (music name disc name, etc.) • Possible recording area is not ramained when entering to REC-PAUSE. • UTOC writing area is full of use when entering to REC-PAUSE or DIVIDE.	• Replace with a REC/PLAY disc having a remained area for registering UTOC. • Replace with the other recording disc possessing an area able to record. • Replace with the other REC/PALY disc having a remained area for writing UTOC.
UTOC Err R	• FTNO > LTNO. • FTNO ≠ 0 or 1. • Unable to read UTOC recorded on the disc.	• Replace with the other disc as abnormality exists in data of UTOC.
UTOC Err A	• Start adress > End adress.	• Replace with the other disc as abnormality exists in data of UTOC.
UTOC Err L0~4	• One of UTOC 0~4 data is looped.	• Replace with the other disc as abnormality exists in data of UTOC.
Not Audio	• Data of not audio is recorded in TNO track mode of presently selected music.	• Select other TNO or replace with other disc.
? Disc	• Data of system ID "MINI" written with ASCII code in TOC is not correct. • Disc type written in TOC is not for Pre, Mastered MD, MD for recording Hybrid MD.	• Unspecified disc. Replace with others and check.
Playback Only	• When entering REC-PAUSE or edit, found that the disc is for playback only.	• As the disc is playback only, replace with a recording disc.
Protected	• Attempt to record or edit as the mis-erasure preventive knob of REC/PLAY disc set to preventive position. • Attempt to edit the write protect track by information written in UTOC.	• Set the mis-erasure preventive knob back to the former position and retry. • As the track attempt to edit is write protected, try it in the other track.
TOC FULL	• UTOC writing area is full of use when entering to REC-PAUSE or DRIVE.	• Replace with a REC/PLAY disc having remained UTOC writing area.
Temp Over	• Inner MD unit temperature becomes excessively high due to some abnormality occurrence.	• Check with the troubleshooting. • Is the unit using in high temperature location?
Mecha Err 1	• Does not come to EJECT complete position however performing EJECT operation.	• Turn OFF the power once and try it again.
Mecha Err 2	• Does not come to LOAD complete position however performing HEAD UP operation.	• Check or signal line to mechanism or loading motor.
Mecha Err 3	• Does not come to HEAD DOWN position however performing HEAD DOWN operation.	
Disc Err RD RD PA WR	• As a result of reading data, data is not correct. Or unable to read correctly. • As abnormality occurred while recording music data, unable to perform correct recording.	• Abnormality in data of TOC, UTOC, disc scratch, etc. Replace with the other disc.

Error Indication	Content of Error	Remedy
TOC Err S TOC Err R TOC Err T	• As a result of reading TOC, data is not correct. • Attempt to read TOC but couldn't.	• Toc information recorded on disc is not meet the MD spec requirement. Replace with the other disc. • Scratch, etc. on the disc, Replace with the other disc.
UTOC W Err	• As abnormality occurred during UTOC rewriting, unable to perform correct rewriting.	• Scratch, etc. on the disc. Replace with the other disc.
Focus Err	• Unable to lead in FOCUS as the disc is inserted.	• Is there any scratch, dust, finger print black spot, etc. on the disc? Check for considerable eccentricity, warp etc. disc.
Blank Disc	• As a result of reading UTOC, all TNO and NAME character number is 0.	• Record and check for disc possible to record.
Detect	• Focus lead in error, etc. occurred due to shock during REC-PLAY.	• Is there any scratch, dust, finger print, black spot, etc. on the disc? Check for considerable eccentricity, warp, etc. of disc.

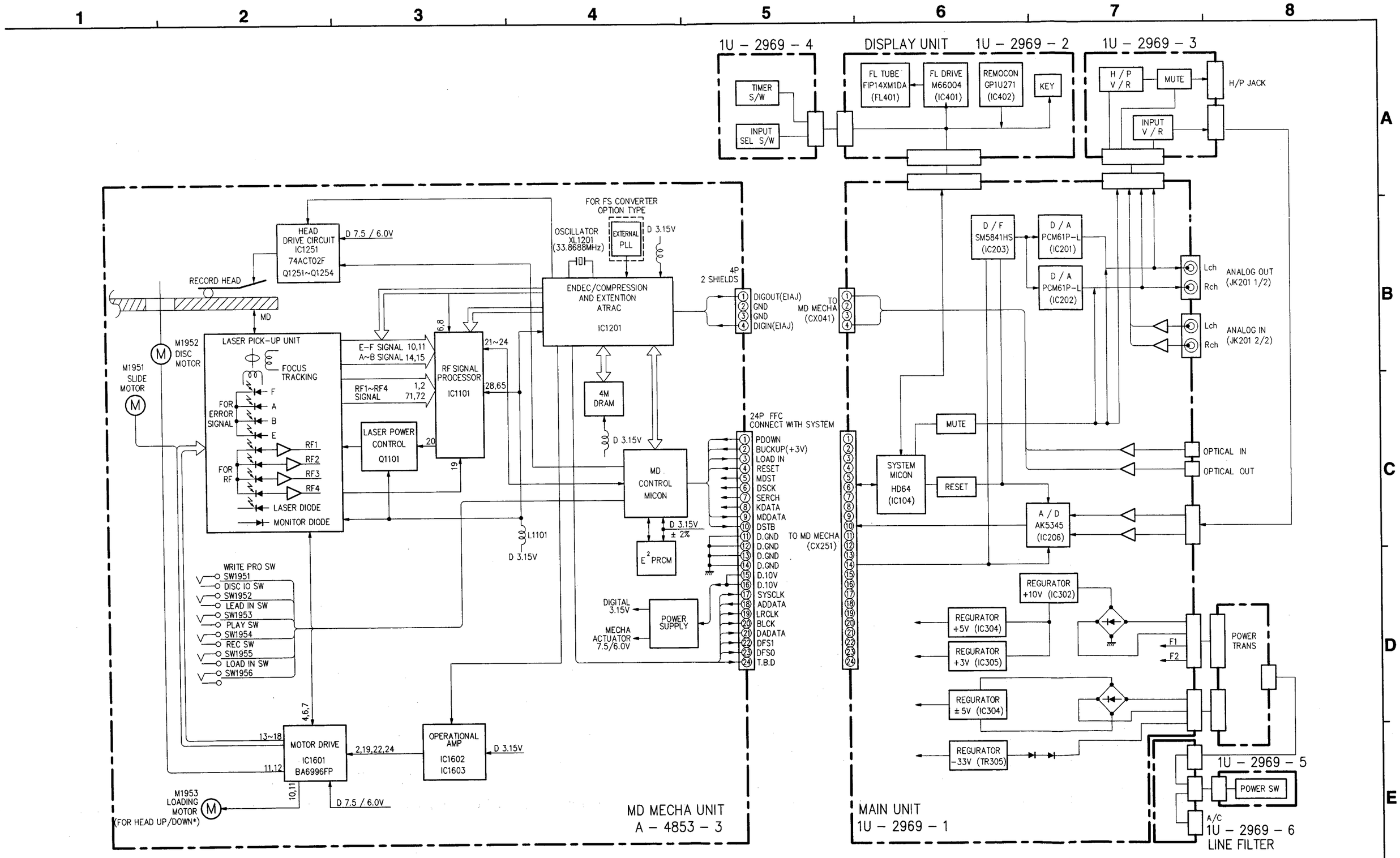
DETAILED DESCRIPTION OF MECHANISM ERROR

Error Indication	Content of Error
Mecha Err 1_*	Does not complete EJECT for long?
Mecha Err 2_*	Does not perform HEAD UP for long?
Mecha Err 1_*	Does not perform HEAD DOWN for long?

* =E	EJECT complete position	< 1.3 V
* =M	Horizontal midway position	> 3.06 V
* =L	Load Complete position	1.853~2.48 V
* =D	HEAD DOWN position	1.3 ~ 1.853 V

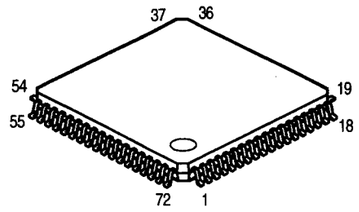
NOTE:

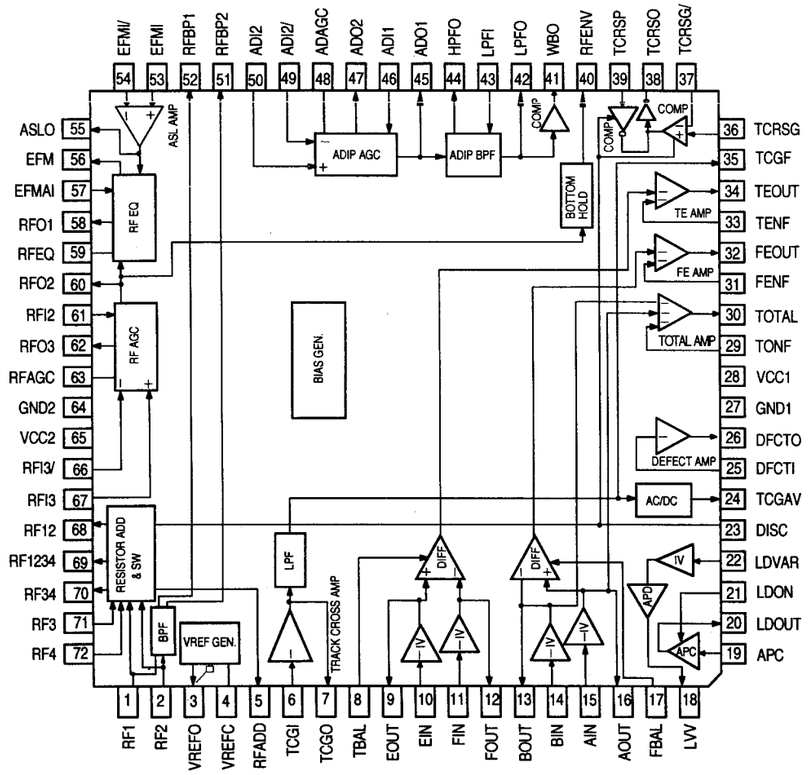
BLOCK DIAGRAM



IC TERMINAL FUNCTION LIST

1R3R50
MD Mechanism Unit (IC1101)

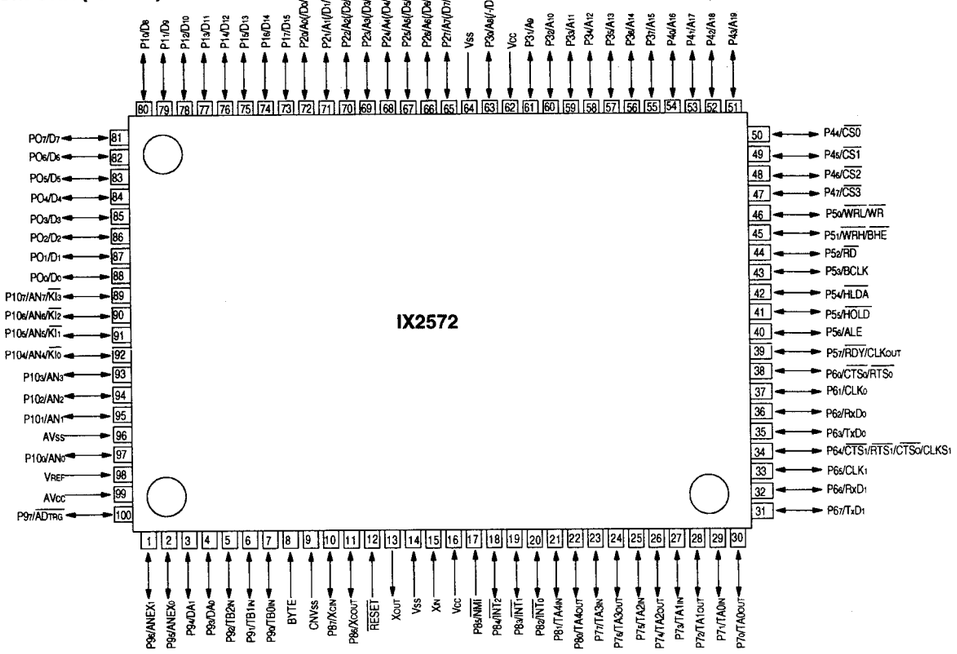




IR3R50 Terminal Function

Pin No.	Symbol	I/O	Function	Connect to
1	RF1	I	RF signal input terminal 1. Inputs pick-up RF output signal.	Pick-up
2	RF2	I	RF signal input terminal 2. Inputs pick-up RF output signal.	Pick-up
3	VREFO	O	Reference voltage (Vcc/2) output terminal. Connect a bypass capacitor of 1μF or greater.	Signal process LSI
4	VREFO	I	Bypass capacitor connecting terminal for inputting reference voltage.	
5	RFADD	O	Resistance adding output terminal of DF1~4.	
6	TCGI	I	Track cross detecting signal amp reverse input terminal at group.	
7	TCGO	O	Track cross detecting signal amp output terminal.	
8	TBAL	I	Tracking balance adjustment terminal.	Signal process LSI
9	EOUT	O	I-V conversion output terminal of photo diode output E for servo.	
10	EIN	I	Input terminal of photo diode output E for servo.	
11	FIN	I	Input terminal of photo diode output F for servo.	
12	FOUT	O	I-V conversion output terminal of photo diode output F for servo.	
13	BOUT	O	I-V conversion output terminal of photo diode output B for servo.	
14	BIN	I	Input terminal of photo diode output B for servo.	
15	AIN	I	Input terminal of photo diode output A for servo.	
16	AOUT	O	I-V conversion output terminal of photo diode output A for servo.	
17	FBAL	I	FOCUS balance adjustment terminal.	Signal process LSL
18	LVV	O	Power supply output terminal for monitor diode.	Pick-up
19	APC	I	Input terminal of monitor diode output.	Pick-up
20	LDOUT	O	Terminal for laser diode drive external PNP transistor.	Pick-up
21	LDON	I	Laser outpput ON/OFF control terminal. H or open : Action L: Non-action	Microcomputer
22	LDVAR	I	Laser output control terminal. Laser output becomming maximum at spplying power supply voltage and becoming maximum at 0V.	Microcomputer
23	DISC	I	Disc mode switching signal input terminal. H or open : Pit line L : Group	Microcomputer
24	TCGAV	O	DC conversion output of track cross amp (group) output.	Microcomputer
25	DFCTI	I	Refect detecting amp reverse input terminal.	
26	DFCTO	O	Defect detecting amp output terminal.	Signal process LSI
27	GND1		GND terminal.	
28	VCC1		Power supply terminal. (connect a 2.2 μF capacitor across GND 1.	
29	TONF	I	TOTAL output amp feadback terminal.	
30	TOTAL	O	TOTAL output terminal.	Signal process LSI
31	FENF	I	Focus error amp feedback terminal.	
32	FEOUT	O	Focus error signal output terminal.	Signal process LSI
33	TENF	I	Focus error amp feedback terminal.	
34	TEOUT	O	Tracking error signal output terminal.	Signal process LSI
35	TCGF	O	Track cross amp (group) output.	
36	TCRSG	I	Track cross comparator non-reverse input terminal (group mode).	
37	TCRSG/	I	Track cross comparator reverse input terminal (group mode).	
38	TCRSO	O	Track cross output terminal.	Signal process LSI
39	TCRSP	I	Track cross comparator input terminal (pit mode).	
40	RFENV	O	RF signal envelope input terminal	
41	WBO	O	ADIP signal output terminal	Signal process LSI
42	LPFO	O	ADIP signal LPF amp output terminal.	
43	LPFI	I	ADIP signal LPF amp input terminal.	
44	HPFO	O	ADIP signal HPF amp output terminal.	
45	ADO1	O	ADIP signal preamp output terminal.	
46	ADI1	I	ADIP signal preamp input terminal.	
47	ADO2	O	ADIP signal AGC amp output terminal.	
48	ADAGC		Filter capacitor connecting terminal for ADIP signal AGC.	
49	ADI2/	I	ADIP AGC amp reverse input terminal.	
50	ADI2	I	ADIP AGC amp non-reverse input terminal.	
51	RFBP2	O	BPF output terminal of RF2 input signal.	
52	RFBP1	O	BPF output terminal of RF1 input signal.	
53	EFMI	I	EFM input terminal (non-reverse).	Signal process LSI
54	EFMI/	I	EFM input terminal (reverse).	Signal process LSI
55	ASLO	O	Slice control output terminal.	
56	EFM	O	RF signal output terminal.	Signal process LSI
57	EFMAI	I	Equalizer amp input terminal.	
58	RFO1	O	RF signal filter amp output terminal.	
59	RFEQ		Capacitor connecting terminal for RF signal equalizer.	
60	RFO2	O	RF signal preamp output terminal.	
61	RFI2	I	RF signal preamp input terminal.	
62	RFO3	O	RF signal AGC amp output terminal.	
63	RFAGC		Filter capacitor connecting terminal for RF signal AGC.	
64	GND2		GND terminal.	
65	VCC2		Power supply terminal. Connect a 2.2 μF capacitor across GND2.	
66	RFI3/	I	RF signal AGC amp reverse input terminal.	
67	RFI3	I	RF signal AGC amp non-reverse input terminal.	
68	RF12	O	Resistance adding output terminal of RF1 input signal and RF2 input signal.	
69	RF1234	O	Resistance adding output terminal of RF1~4 input signal.	
70	RF34	O	Resistance adding output terminal of RF3 input signal and RF4 input signal.	
71	RF3	I	RF signal input terminal 3. Inputs RF signal output of pick-up.	Pick-up
72	RF4	I	RF signal input terminal 4. Inputs RF signal output of pick-up.	Pick-up

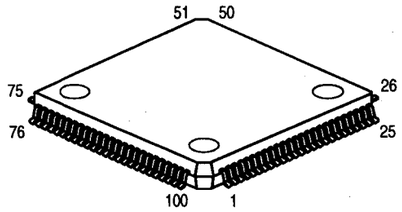
IX2572
MD Mechanism Unit (IC1401)

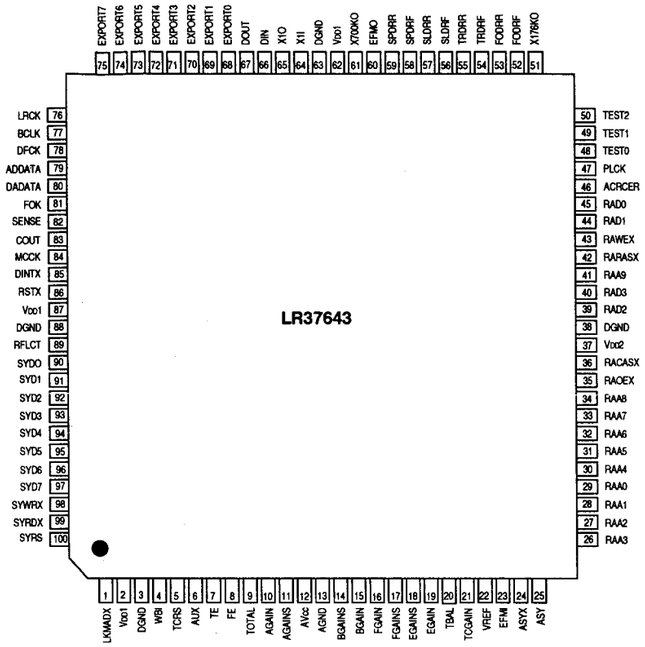


IX2572 Terminal Function

Pin No.	Symbol	I/O	Function
1	P96/ANEX1	O	No connection.
2	P95/ANEX0	O	No connection.
3	P94/DA1	O	LDVAR (laser power adjustment output).
4	P93/DA0	O	ADJS (automatic adjustment step check).
5	P92/TB2IN	O	No connection.
6	P91/TB1IN	I	LDSWCK input (interrupts at simple).
7	P90/TB0IN	I	ERR input.
8	BYTE	I	BYTE
9	CNVss	I	CNVss
10	P87/XCIN	O	No connection.
11	P86/XCOUT	O	No connection.
12	RESET	I	RESET input.
13	XOUT		No connection.
14	Vss		GND
15	XIN	(I)	EXTAL (8.4672 MHz input).
16	Vcc		+3.5 V
17	P85/NMI	I	—
18	P84/INT2	I	DINT (interrupt input from MD REC/PLAY LSI).
19	P83/INT1	I	DSENSE (MD REC/PLA LSI servo sense input).
20	P82/INT0	I	ST-ID/MD-ON.
21	P81/TA4IN	I	CD search input (sync REC interrupt input).
22	P80/TA4OUT	O	MDRSW output.
23	P77/TA3IN	O	FSW1 (SW power supply frequency shifting).
24	P76/TA3OUT	O	FSW2 (H/L shifting of SW power supply f).
25	P75/TA2IN	I	P-DOWN (power down detection).
26	P74/TA2OUT	O	HDON (magnetic head current ON/OFF output).
27	P73/TA1IN	O	LD+ (loading motor ⊕ control output).
28	P72/TA1OUT	O	LD– (loading motor control output).
29	P71/TA0IN	I	CIN (track count signal input).
30	P70/TA0OUT	I	INNSW (inner SW detection input).
31	P67/TxD1	I	
32	P66/RxD1	I	
33	P65/CLK1	I	—
34	P64/CTS1/RTS1/CTS0/CLKS1	O	DSTB (system computer communication feasible or busy).
35	P63/TxD0	O	MDDATA (MD data output) 32 byte LSB first.
36	P62/RxD0	I	KDATA (system computer data input) 32 byte LSB first.
37	P61/CLK0	I	DSCK (system computer communication input).
38	P60/CST0/RTS0	I	—
39	P57	O	R/P (REC/PLAY switching).
40	P56	I	FOK (focus servo state monitor input).
41	P55	O	HF ON (high frequency overrup ON/OFF output).
42	P54		—
43	P53	I	SELO (H: 4-generation, L: 3-generation LSI).
44	P52	O	SYRS (MD R/P LSI register select signal output).
45	P51	O	SYRD (MD R/P LSI read signal output).
46	P50	O	SYWR (MD R/P LSI write signal output).
47	P47	I/O	SYSD7 (ENDEC/ATRAC data bus 7).
48	P46	I/O	SYSD6 (ENDEC/ATRAC data bus 6).
49	P45	I/O	SYSD5 (ENDEC/ATRAC data bus 5).
50	P44	I/O	SYSD4 (ENDEC/ATRAC data bus 4).
51	P43	I/O	SYSD3 (ENDEC/ATRAC data bus 3).
52	P42	i/O	SYSD2 (ENDEC/ATRAC data bus 2).
53	P41	I/O	SYSD1 (ENDEC/ATRAC data bus 1).
54	P40	I/O	SYSD0 (ENDEC/ATRAC data bus 0).
55	P37	O	No connection.
56	P36	O	No connection.
57	P35	O	No connection.
58	P34	O	EEPRO (E_2 PROM protect cancel)
59	P33	O	EPCS (E_2 PROM chip selector output).
60	P32	I/O	EERD (E_2 PROM serial data output).
61	P31	O	EEPK (E_2 PROM serial clock output).
62	Vcc	I	+3.15 V
63	P30	O	No connection.
64	Vss		GND
65	P27	O	No connection.
66	P26	O	No connection.
67	P25	O	No connection.
68	P24	O	No connection.
69	P23	O	DISC (H: Pit).
70	P22	O	PCNTO
71	P21	O	PCNT1
72	P20	O	LDON (H: ON)
73	P17	O	ANLPTR output.
74	P16	O	ADPON output.
75	P15	O	DAPON output.
76	P14	O	DFS0 output.
77	P13	O	DFS1 output.
78	P12	O	DIGEX output.
79	P11	O	DIGCD output.
80	P10	O	XRST (system reset output).
81	P07	O	ADMUTE output.
82	P06	O	EMPHA output.
83	P05	O	DA MUTE (audio mute ON/OFF output).
84	P04	O	MUTE
85	P03	O	DOUTM
86	P02	I	TEST2 (special mode select 2).
87	P01	I	TEST1 (special mode select 1).
88	P00	I	TEST0 (special mode select 0)
89	P107/AN7/KI3	I	TCG (TOTAL signal detection input).
90	P106/AN6/KI2	I	AVCK2 (AD/DA section 3.1 V monitor input).
91	P105/AN5/KI1	I	AVCK1 (DOUT section 5V monitor input).
92	P104/AN4/KI0	I	TEMP (temperature sensor detection input).
93	P103/AN3	I	MINF (disk type/REC window).
94	P102/AN2	I	TESTK1 (test key input1).
95	P101/AN1	I	TESTK2 (test key input2).
96	AVss		GND
97	P100/AN0	I	HIFN (input position/head position).
98	VREF		V_{REF} (+3.15 V)
99	AVcc		+3.15 V
100	P97/ADTRG	I	—

LR37643
MD MECHANISM UNIT (IC1201)



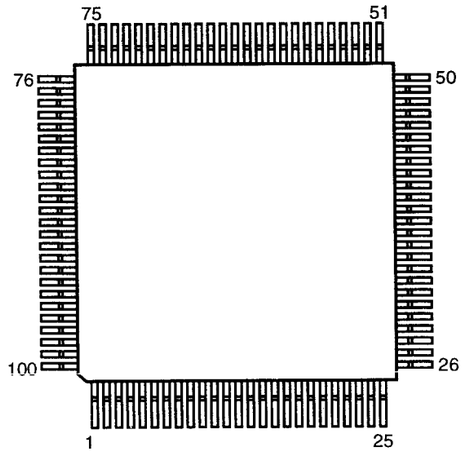


LR37643 Terminal Function

Pin No.	Symbol	I/O	Function	Connect to
1	LKMADX	O	Nearby link sector window signal at playback	For test
2	VDD1	—	Digital power supply.	Power supply
3	DGND	—	Digital GND.	Ground
4	WBI	I	ADIP signal	RF LSI
5	TCRS	I	Track cross signal.	RF LSI
6	AUX	AI	Universal analog input	RF LSI
7	TE	AI	Tracking error signal. E~F.	RF LSI
8	FE	AI	Focus error signal. A-B.	RF LSI
9	TOTAL	AI	Focus signal. A+B.	RF LSI
10	AGAIN	AO	RF LSI A amp gain adjustment output.	RF LSI
11	AGAINS	AO	RF LSI A amp gain switching output (high reflection ↔ low reflection).	RF LSI
12	AVcc	—	Analog power supply.	Power supply
13	AGND	—	Analog GND	Ground
14	BGAINS	AO	RF LSI B amp gain switching output (high reflection ↔ low reflection).	RF LSI
15	BGAIN	AO	RF LSI B amp gain adjustment output.	RF LSI
16	FGAIN	AO	RF LSI F amp gain adjustment output.	RF LSI
17	FGAINS	AO	RF LSI F amp gain switching output (high reflection ↔ low reflection).	RF LSI
18	EGAINS	AO	RF LSI E amp gain switching output (high reflection ↔ low reflection).	RF LSI
19	EGAIN	AO	RF LSI E amp gain adjustment output.	RF LSI
20	TBAL	AO	Balance adjustment for tracking error.	RF LSI
21	TCGAIN	AO	Gain adjustment output of track loss detection amp.	RF LSI
22	VREF	AI	Reference voltage of RF LSI.	RF LSI
23	EFMI	AI	EFM signal from RF amp.	RF LSI
24	ASYX	AO	Negative logic output for EFM signal slice level control.	RF LSI
25	ASY	AO	Positive logic output for EFM signal slice level control.	RF LSI
26	RAA3	O	Address output to external D-RAM. ADR3	DRAM
27	RAA2	O	Address output to external D-RAM. ADR2	DRAM
28	RAA1	O	Address output to external D-RAM. ADR1	DRAM
29	RAA0	O	Address output to external D-RAM. ADR0 (LSB)	DRAM
30	RAA4	O	Address output to external D-RAM. ADR4	DRAM
31	RAA5	O	Address output to external D-RAM. ADR5	DRAM
32	RAA6	O	Address output to external D-RAM. ADR6	DRAM
33	RAA7	O	Address output to external D-RAM. ADR7	DRAM
34	RAA8	O	Address output to external D-RAM. ADR8	DRAM
35	RAOEX	O	Data output enable signal output to external D-RAM	DRAM
36	RACASX	O	Column address strobe signal output to external D-RAM.	DRAM
37	VDD2	—	DRAM interface power supply.	Power supply
38	DGND	—	Digital GND.	Ground
39	RAD2	I/TO	Data input/output with external D-RAM. D2	DRAM
40	RAD3	I/TO	Data input/output with external D-RAM. D3 (MSB).	DRAM
41	RAA9	O	Address output to external D-RAM. ADR9.	DRAM
42	RARASX	O	Low address strobe signal output to external D-RAM.	DRAM
43	RAWEX	O	Data write enable signal output to external D-RAM.	DRAM
44	RAD1	I/TO	Data input/output with external D-RAM. D1.	DRAM
45	RAD0	I/TO	Data input/output with external D-RAM. D0 (LSB).	DRAM
46	ACRCER	O	CRC error flag monitr output of ADIP.	For Test
47	PLCK	O	EFM PLL clock output at playback.	For Test
48	TEST0	I	Input for test. In normal usage, connect to GND.	For Test
49	TEST1	I	Input for test. In normal usage, connect to GND.	For Test
50	TEST2	I	Input for test. Shifting modes: en-dec/servo ↔ track.	For Test
51	X176KO	O	Clock output. f = 176 kHz (4fs).	Driver
52	FODRF	O	Focus servo forward output. PWM.	Driver
53	FODRR	O	Focus servo reverse output. PWM.	Driver
54	TRDRF	O	Tracking servo forward output. PWM.	Driver
55	TRDRR	O	Tracking servo reverse output. PWM.	Driver
56	SLDRF	O	Slide servo forward output. PWM.	Driver
57	SLDRR	O	Slide servo reverse output. PWM.	Driver
58	SPDRF	O	Spindle servo forward output, or spindle servo output. PWM.	Driver
59	SPDRR	O	Spindle servo reverse output, or spindle revolution forward/reverse shifting.	Driver
60	EFMO	O	EFM signal output at recording. CIF (C1 error flag) monitor output.	Driver
61	X700KO	O	Clock output. f=705.6 kHz Outputs clock also at RSTX = 0.	Power supply circuit
62	VDD1	—	Digital power supply.	Power supply
63	DGND	—	Digital GND.	Ground
64	X1I	I	Oscillation circuit input. 33.8688 MHz (768fs).	XTAL
65	X1O	O	Oscillation circuit output. 33.8688 MHz (768fs).	XTAL
66	DIN	I	Digital input signal.	DI/O
67	DOUT	O	Digital output signal.	DI/O
68	EXPORT0	O	Microcomputer expansion output port.	Universal use
69	EXPORT1	O	Microcomputer expansion output port.	Universal use
70	EXPORT2	O	Microcomputer expansion output port.	Universal use
71	EXPORT3	O	Microcomputer expansion output port.	Universal use
72	EXPORT4	O	Microcomputer expansion output port.	Universal use
73	EXPORT5	O	Microcomputer expansion output port.	Universal use
74	EXPORT6	O	Microcomputer expansion output port.	Universal use
75	EXPORT7	O	Microcomputer expansion output port.	Universal use
76	LRCK	O	Lch/Rch switching output of music data.	AD/DA
77	BCLK	O	Shift clock of music data.	AD/DA
78	DFCK	O	Clock for AD/DA converter digital filter. 256fs.	AD/DA
79	ADDATA	I	Voice data input.	AD/DA
80	DADATA	O	Voice data output.	AD/DA
81	FOK	O	Focus OK detection signal.	System computer
82	SENSE	O	Servo dtate detection signal.	System computer
83	COUT	O	Track cross signal output.	System computer
84	MCCK	O	Clock output for microcomputer. Outputs also at RSTX=0.	System computer
85	DINTX	O	Interrupt request output terminal to system microcomputer interface.	System computer
86	RSTX	I	Chip select input. Reset at L. (Make RSTX L at turning ON power or after turning ON power.)	System computer
87	VDD1	—	Digital power supply.	Power supply
88	DGND	—	Digital GND.	Ground
89	RFLCT	I	Shifting signal of A, B, E, F gain with disk reflection rate.	System computer
90	SYD0	I/TO	Data bus terminal of system computer interface. LSB.	System computer
91	SYD1	I/TO	Data bus terminal of system computer interface.	System computer
92	SYD2	I/TO	Data bus terminal of system computer interface.	System computer
93	SYD3	I/TO	Data bus terminal of system computer interface.	System computer
94	SYD4	I/TO	Data bus terminal of system computer interface.	System computer
95	SYD5	I/TO	Data bus terminal of system computer interface.	System computer
96	SYD6	I/TO	Data bus terminal of system computer interface.	System computer
97	SYD7	I/TO	Data bus terminal of system computer interface. MSB	System computer
98	SYWRX	I	Register writing pulse input of system microcomputer interface.	System computer
99	SYRDX	I	Register reading pulse input of system microcomputer interface.	System computer
100	SYRS	I	Register select pulse input of system microcomputer interface.	System computer

Not: I = Input, O = Output, TO = 3-state output, AI = Analog input, AO = Analog output

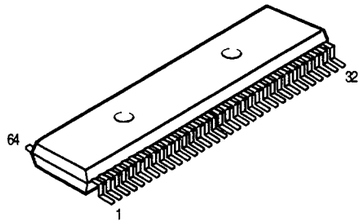
HD6433837B48H (IC104)
Microcomputer

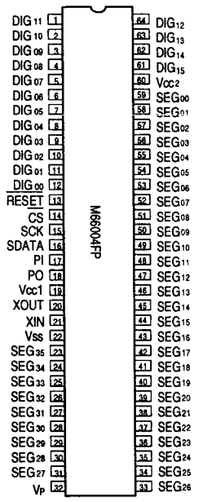


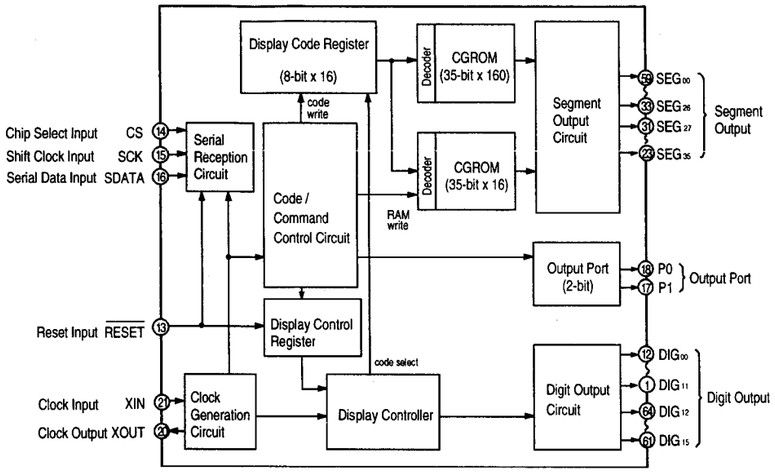
HD6433837B48H Terminal Function

Pin No.	Symbol	Port Name	I/O	Ini	Ext	Function
1	Pc3/AN11	TMPLY	I	—	P.UP	Timer PLAY signal input.
2	AVss	AVss	I	—	—	Connect with GND (GND for A/D converter).
3	TEST	TEST	I	—	—	Connect with GND (Test terminal).
4	X2	X2	I	—	—	Open (Sub clock output).
5	X1	X1	O	—	—	Connect with +5V (Sub clock input terminal).
6	Vss	Vss	I	—	—	Connect with GND for system.
7	OSC1	OSC1	I	—	—	Ceramic oscillator input.
8	OSC2	OSC2	O	—	—	Ceramic oscillator output.
9	$\overline{RES}$	$\overline{RESET}$	I	—	—	Reset signal input (oscillation stable time: 40 msec).
10	MD0	MD0	I	—	—	Connect with +5V (Reset control).
11	P20/$\overline{IRQ4}$/$\overline{ADTRG}$	JOGA	I	—	P.UP	Pulse noninverting input terminal of jog A.
12	P21/UD	SRVICE	I	—	P.UP	Service mode judgment input ("H": normal mode, "L": service mode.
13	P22	FLDA	O	L	—	Data output to FL tube controller.
14	P23	FLCK	O	L	—	Clock output to FL tube controller.
15	P24	FLCS	O	L	—	Chip selection output to FL tube controller.
16	P25		O	L	—	Open (Not used).
17	P26		O	L	—	Open (Not used).
18	P27	CE	O	L	—	Latch output for LC8903 microcomputer interface.
19	P30/SCK1	CL	O	L	—	Clock output for LC8903 microcomputer interface.
20	P31/SI1	DO	I	L	—	Data input for LC8903 microcomputer interface.
21	P32/SO1	DI	O	L	—	Address output for LC8903 microcomputer interface.
22	P33/SCK2	SHT	O	L	—	Open (Not used).
23	P34/SI2	SO	O	L	—	Open (Not used).
24	P35/SO2	SI	O	L	—	Open (Not used).
25	P36/STRB	C/D	O	L	—	Open (Not used).
26	P37/$\overline{CS}$	CS	O	L	—	Open (Not used).
27	Vss	Vss	I	—	—	Connect with GND (GND for system).
28	V3		I	—	—	Open (power supply for LCD).
29	V2		I	—	—	Open (power supply for LCD).
30	V1		I	—	—	Open (power supply for LCD).
31	Vcc	Vcc	I	—	—	Connect with +5V (power supply for system).
32	PA3/COM4	EMPHA	I	—	(UP)	Emphasis signal input ("H": emphasis, "L": non-emphasis).
33	PA2/COM3	ERROR	I	—	P.DW	Error signal input "H": error (lock NG), "L": non-error (lock OK)).
34	PA1/COM2	SUB1	I	—	(UP)	fs input1 "L" ┐ 44.1 "L" ┐ 48 "H" ┐ 32(kHz) "H" ┐ unlock
35	PA0/COM1	SUB2	I	—	(UP)	fs input2 "L" ┘ "H" ┘ "H" ┘ "L" ┘
36	P50/WKP0/SEG1	COPY	O	H	(UP)	COPY bit setting terminal ("H": non-rights reserved, "L": rights reserved).
37	P51/WKP1/SEG2	CTG1	O	H	(UP)	Category setting terminal 1 "H" ┐ "L" ┐
38	P52/WKP2/SEG3	CTG2	O	H	(UP)	Category setting terminal 2 "H" ┘ sample rate converter "L" ┘ general
39	P53/WKP3/SEG4	CTG3	O	L	(UP)	Category setting terminal 3 "H" ┘ "L" ┘
40	P54/WKP4/SEG5	LBIT	O	H	(UP)	L bit setting terminal ("H": original, "L": high order).
41	P55/WKP5/SEG6		O	L	—	Open (Not used).
42	P56/WKP6/SEG7		O	L	—	Open (Not used).
43	P57/WKP7/SEG8		O	L	—	Open (Not used).
44	P60/SEG9		O	L	—	Open (Not used).
45	P61/SEG10		O	L	—	Open (Not used).
46	P62/SEG11		O	L	—	Open (Not used).
47	P63/SEG12		O	L	—	Open (Not used).
48	P64/SEG13		O	L	—	Open (Not used).
49	P65/SEG14		O	L	—	Open (Not used).
50	P66/SEG15		O	L	—	Open (Not used).
51	P67/SEG16		O	L	—	Open (Not used).
52	P70/SEG17		O	L	—	Open (Not used).
53	P71/SEG18		O	L	—	Open (Not used).
54	P72/SEG19		O	L	—	Open (Not used).
55	P73/SEG20		O	L	—	Open (Not used).
56	P74/SEG21		O	L	—	Open (Not used).
57	P75/SEG22		O	L	—	Open (Not used).
58	P76/SEG23		O	L	—	Open (Not used).
59	P77/SEG24		O	L	—	Open (Not used).
60	P80/SEG25		O	L	—	Open (Not used).
61	P81/SEG26		O	L	—	Open (Not used).
62	P82/SEG27		O	L	—	Open (Not used).
63	P83/SEG28		O	L	—	Open (Not used).
64	P84/SEG29		O	L	—	Open (Not used).
65	P85/SEG30		O	L	—	Open (Not used).
66	P86/SEG31		O	L	—	Open (Not used).
67	P87/SEG32		O	L	—	Open (Not used).
68	P90/SEG33		O	L	—	Open (Not used).
69	P91/SEG34		O	L	—	Open (Not used).
70	P92/SEG35	ADRST	O	L	—	Open (Not used).
71	P93/SEG36	AMUTE	O	L	—	Open (Not used).
72	P94/SEG37/M	XRST	O	L	—	Open (Not used).
73	P95/SEG38/DO	RECLED	O	L	—	Open (Not used).
74	P96/SEG39/CL2	BKLIGHT	O	L	—	Open (Not used).
75	P97/SEG40/CL1	STB	I	L	P.UP	Strobe signal input.
76	Vcc	Vcc	I	—	—	Connect with +5V (power supply for system).
77	P10/TMOW	C/O.OUT	O	L	—	COAX/OPT switching signal output ("H": COAX, "L": OPT).
78	P11/TMOFL	D/A.OUT	O	L	—	Digital/Analog switching signal output ("H": Digital, "L": Analog).
79	P12/TMOFH	POWER	O	L	—	Open (Not used).
80	P13/TMIG		O	L	—	Open (Not used).
81	P14/PWM		O	L	—	Open (Not used).
82	P15/IRQ1/$\overline{TMIB}$	REMOTE	I	—	P.UP	Remote control receiving interrupt terminal.
83	P16/IRQ2/$\overline{TMIC}$	75E	O	—	—	Connect with GND "H": DMD-7.5E, L: DMD-1500.
84	P17/IRQ3/$\overline{TMIF}$	JOGA	O	—	P.UP	Pulse input for jog A.
85	P40/SCK3	RTS	O	H	P.UP	Status receive control. "H": Inhibit receive, "L": Permit receive.
86	P41/RXD	RXD	I	H	P.UP	Status receive terminal.
87	P42/TXD	TXD	O	H	P.UP	Command transmit terminal.
88	P43/$\overline{IRQ0}$	CTS	I	H	P.UP	Command transmit control terminal. "H": Inhibit transmit, "L": Permit transmit.
89	AVcc	AVcc	I	—	—	Connect with +5V (power supply for A/D converter).
90	PB0/AN0	KEY0	I	—	P.UP	Key matrix input 0 (A/D conversion use).
91	PB1/AN1	KEY1	I	—	P.UP	Key matrix input 1 (A/D conversion use).
92	PB2/AN2	KEY2	I	—	P.UP	Key matrix input 2 (A/D conversion use).
93	PB3/AN3	KEY3	I	—	—	Connect with GND.
94	PB4/AN4		I	—	—	Connect with GND.
95	PB5/AN5		I	—	—	Connect with GND.
96	PB6/AN6		I	—	—	Connect with GND.
97	PB7/AN7	JOGB	I	—	P.UP	Pulse input of jogB.
98	PC0/AN8	D/A.IN	I	—	P.UP	Switching input for DIG/ANA "H": digital, "L": analog.
99	PC1/AN9	C/O.IN	I	—	P.UP	Switching input for COAX/OPT "H": GOAX, "L": OPT.
100	PC2/AN10	TMREC	I	—	P.UP	Input for timer REC.

M66004FP (IC401)







M66004FP Terminal Function

Symbol	Name	Function
$\overline{RESET}$	Reset Input	Initializes internal state of M66004.
$\overline{CS}$	Chip Select Input	Able to communicate with MCU in "L" mode. Command from MCU will be disregareded in "H" mode.
SCK	Shift Clock Input	Shifts input data at rise from "L" to "H".
SDATA	Serial Data Input	Inputs character code or command data needed to display from MSB.
XIN XOUT	Clock Input Clock Output	Sets oscillation frequency by connecting external resistor and capacitor (maximum oscillation frequency fosc (max)=1MHz). Also feasible to apply external clock. In this case, injects external clock to Xin terminal and opens Xout terminal.
DIG 00 ~ DIG15	Digit Output	Connect to digit terminal of VFD. DIG00~DIG15 correspond to the 1st figure and 16th figure respectively.
DIG 00 ~ DIG35	Segment Output	Connect to segment terminal of VFD. For corresponding SEG00~SEG35 to segment terminal of VFD, refer to the figure right.
P0, P1		Output port (static movement).
Vcc1		Positive power supply terminal for internal logic.
Vcc2		Positive power supply terminal for high tension output port.
Vss		GND terminal.
Vp		Negative power supply terminal for VFD drive.

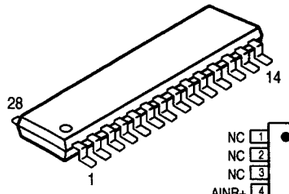
(Forwarding connection of segment output terminal.)

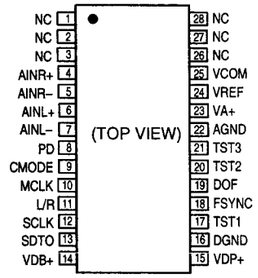
00	01	02	03	04
05	06	07	08	09
10	11	12	13	14
15	16	17	18	19
20	21	22	23	24
25	26	27	28	29
30	31	32	33	34

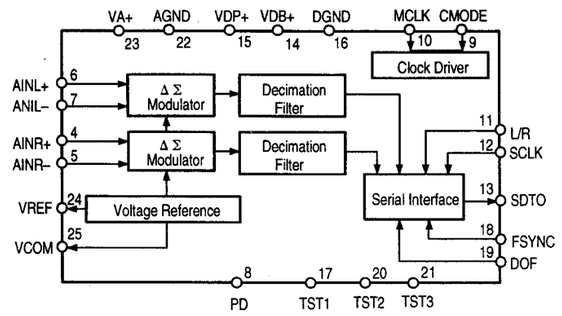
35

☐ in the right figure indicates 1 dot of segment, the figure in ☐ shows the segment output terminal number (00 ~ 35) to be connected.

AK5345-VS-E1 (IC206)







AK5345-VS-E1 Terminal Function

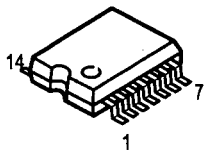
Pin No.	Symbol	I/O	Function
4	AINR+	I	Rch analog positive input terminal.
5	AINR–	I	Rch analog negative input terminal.
6	AINL+	I	Lch analog positive input terminal.
7	AINL–	I	Lch analog negative input pin.
8	PD	I	Power down terminal. Becomes "H" in power down mode. From "↓" offset calibration will start. When tuning ON the power or shift the frequency, make sure to perform calibration once.
9	CMODE	I	Master clock selection terminal. "L": CLK=256 fs (12.288 MHz @ fs=48 kHz) "H": CLK=384 fs (18.432 Mhz @ fs=48 kHz)
10	MCLK	I	Master clock input terminal. CMODE="H": 384 fs CMODE="L": 256 fs
11	L/R	I	Input channel selection terminal. Inputs fs clock. When DOF="L", outputs Lch at "H", Rch at "L". When DOF="H", polarity is reversed.
12	SCLK	I	Serial data clock terminal. With "↓" of this terminal, outputs 1-bit of output data. Inputs 32 fs ~ 64 fs clock.
13	SDTO	O	Serial data output terminal. Data is output by close forwarded 2's compliment, MSB first, 16-bit. After output 16-bit, outputs "L". Mode is "L" at a time power down (PD="H").
14	VDB+	—	Power supply terminal of digital section, +5V (silicon PWB potential).
15	VDP+	—	Power supply terminal of digital section, +5V.
16	DGND	—	Ground terminal of digital section.
17	TST1	I	Test pin. Make this terminal opened or "L".
18	FSYNC	I	Frame sync clock terminal. SDATA will be shifted by SCLK at "H".
19	DOF	I	Digital output format terminal. "L": Close to forward "H" I^2S interchange format
20	TST2	O	Test terminal. Use as opened.
21	TST3	O	Test terminal. Use as opened.
22	AGND	—	Analog ground terminal.
23	VA+	—	Analog power supply terminal, +5V.
24	VREF	O	Reference voltage output terminal, (VA+) –3.0V Between VA+ connect a 10μF or lesser electrolytic capacitor and a 0.1μF ceramic capacitor.
25	VCOM	O	Common voltage output terminal, (VA+) –2.5V. Between VA+ connect a 0.1μF ceramic capacitor.

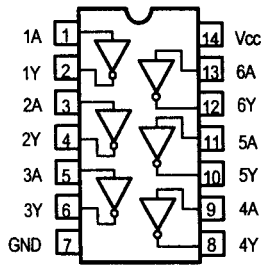
Note: All other terminals except the above are no connection (NC). NC terminals are not bonded internally.

SMICONDUCTORS

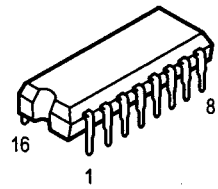
● IC's

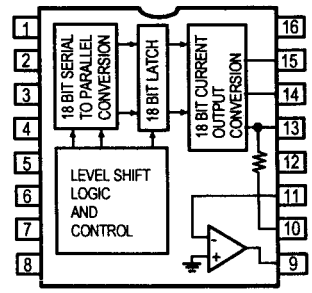
TC74HCU04AF (IC101, 102, 105, 209, 210, 301)
TC74HC05AF (IC106)



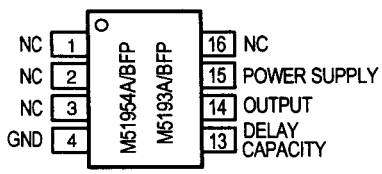


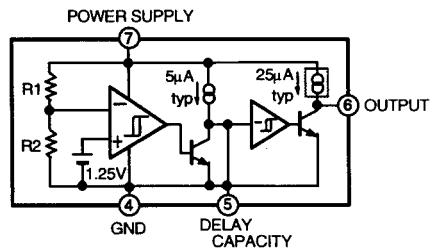
PCM61P-L (IC201, 202)



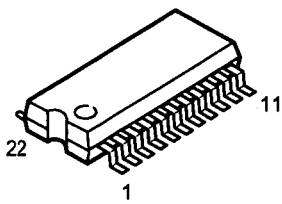


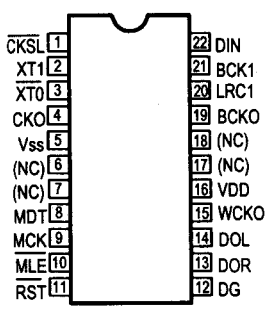
M51953A (IC103)



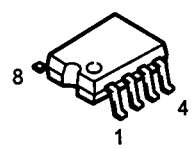


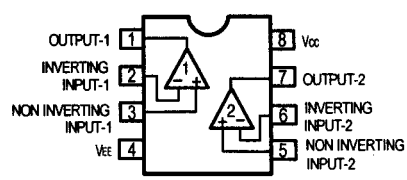
SM5841HS (IC203)



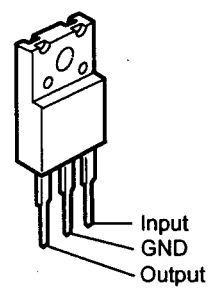


BA4510F (IC207, 208)
BA15218F (IC204)

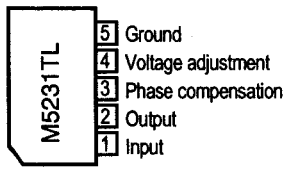


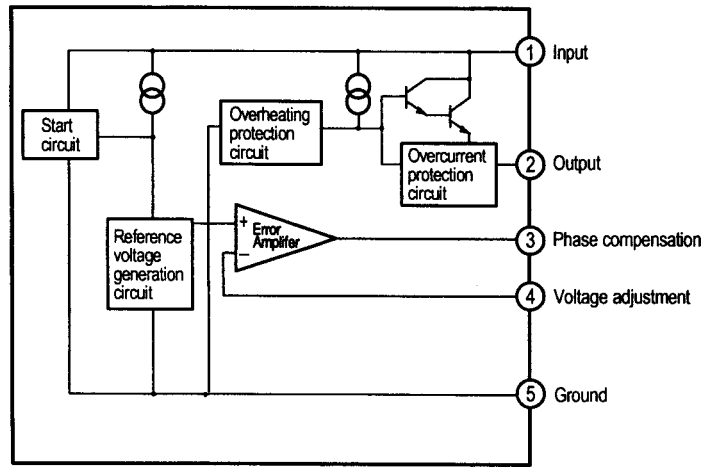


NJM7805FA (IC304)

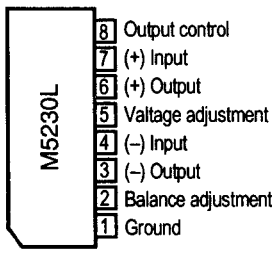


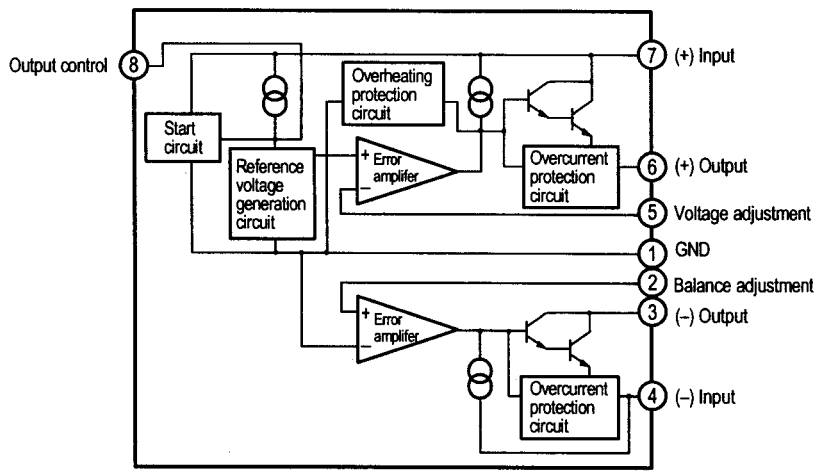
M5231TL (IC302, 305)



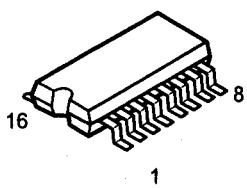


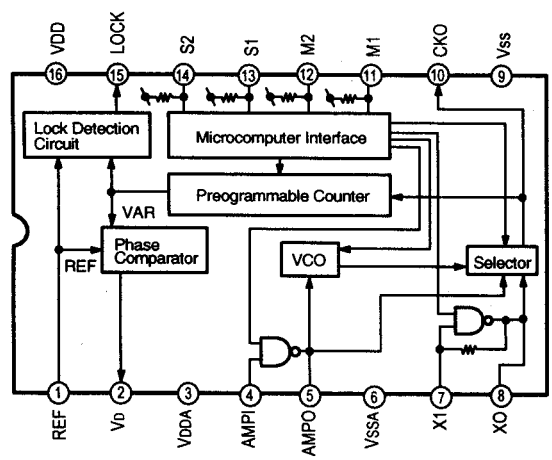
M5230L (IC306)



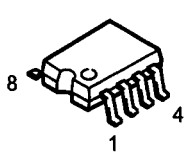


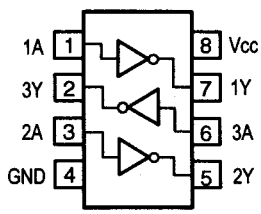
TC9246F(IC403)



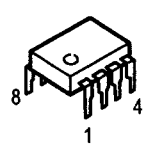


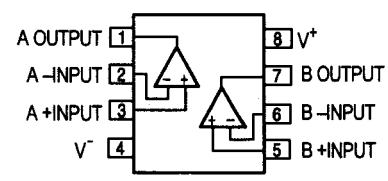
TC7WU04F (IC404)





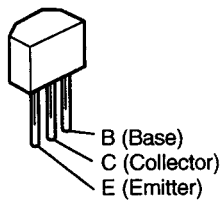
UPC4570C (IC205)



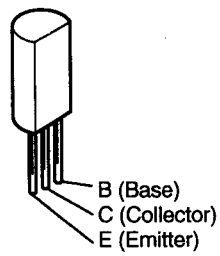


● TRANSISTORS

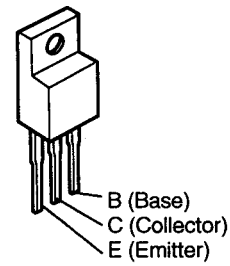
2SC1740S
2SD2144



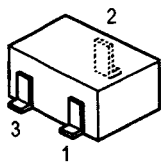
2SB562 (C)



2SB1185
2SD1762

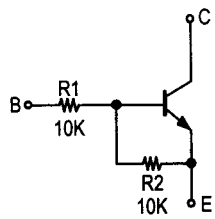


DTA124XKA
DTC114EK
DTC124EK
DTC323TK

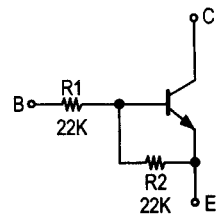


1: Emitter
2: Collector
3: Base

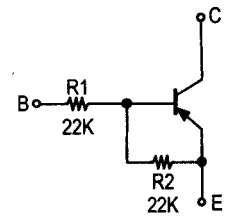
DTC114EK



DTC124EK

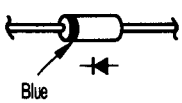


DTA124XKA

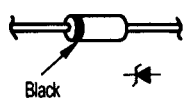


● DIODE

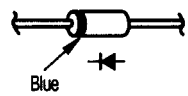
1SR35-200A



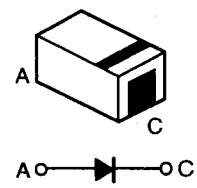
MTZJ7.5A
MTZJ36A



1SS270A



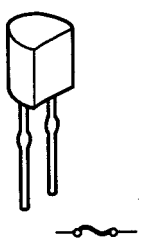
HVU17



C: Cathode
A: Anode

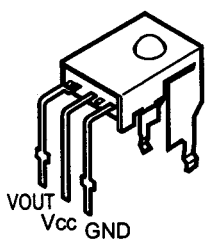
● IC PROTECTER

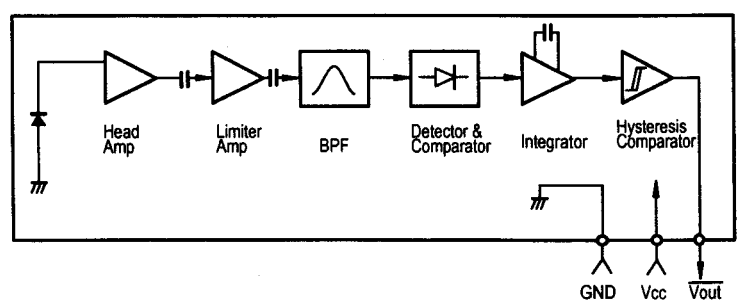
ICP-N20 (IC303)



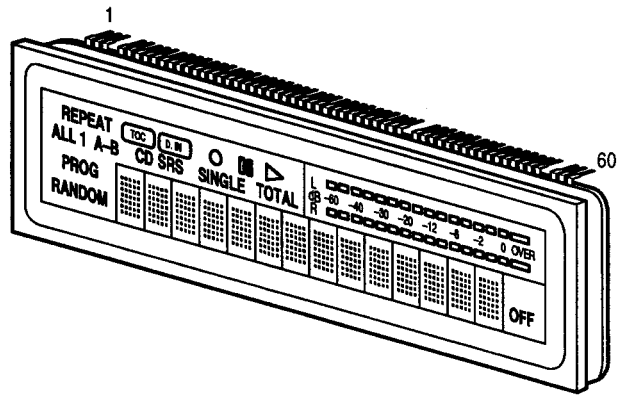
● OTHER

GP1U271X (Remote Control Sensor)
(IC402)

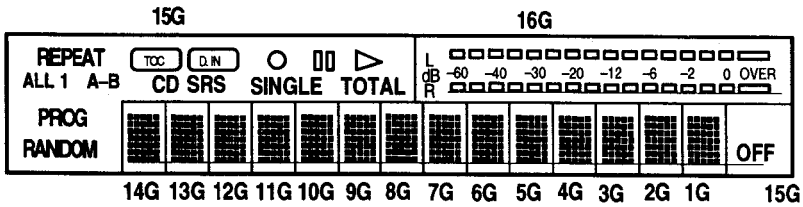




● FL DISPLAY FIP14XM1DA (Part No. : 393 8019 005) (FL401)



Grid partition



1	2	3	4	5	
6	7	8	9	10	
11	12	13	14	15	
16	17	18	19	20	
21	22	23	24	25	
26	27	28	29	30	
31	32	33	34	35	

Pin Connection

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Electrode	F1	F1	F1	NP	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
					S35	S34	S33	S32	S31	S30	S29	S28	S27	S26	S25	S24	S23	S22	S21	S20
Pin No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Electrode	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	NP
	S19	S18	S17	S16	S15	S14	S13	S12	S11	S10	S9	S8	S7	S6	S5	S4	S3	S2	S1	
Pin No.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Electrode	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	F2	F2	F2

Note: F: Filament G: Grid P: Anode NP: No Pin

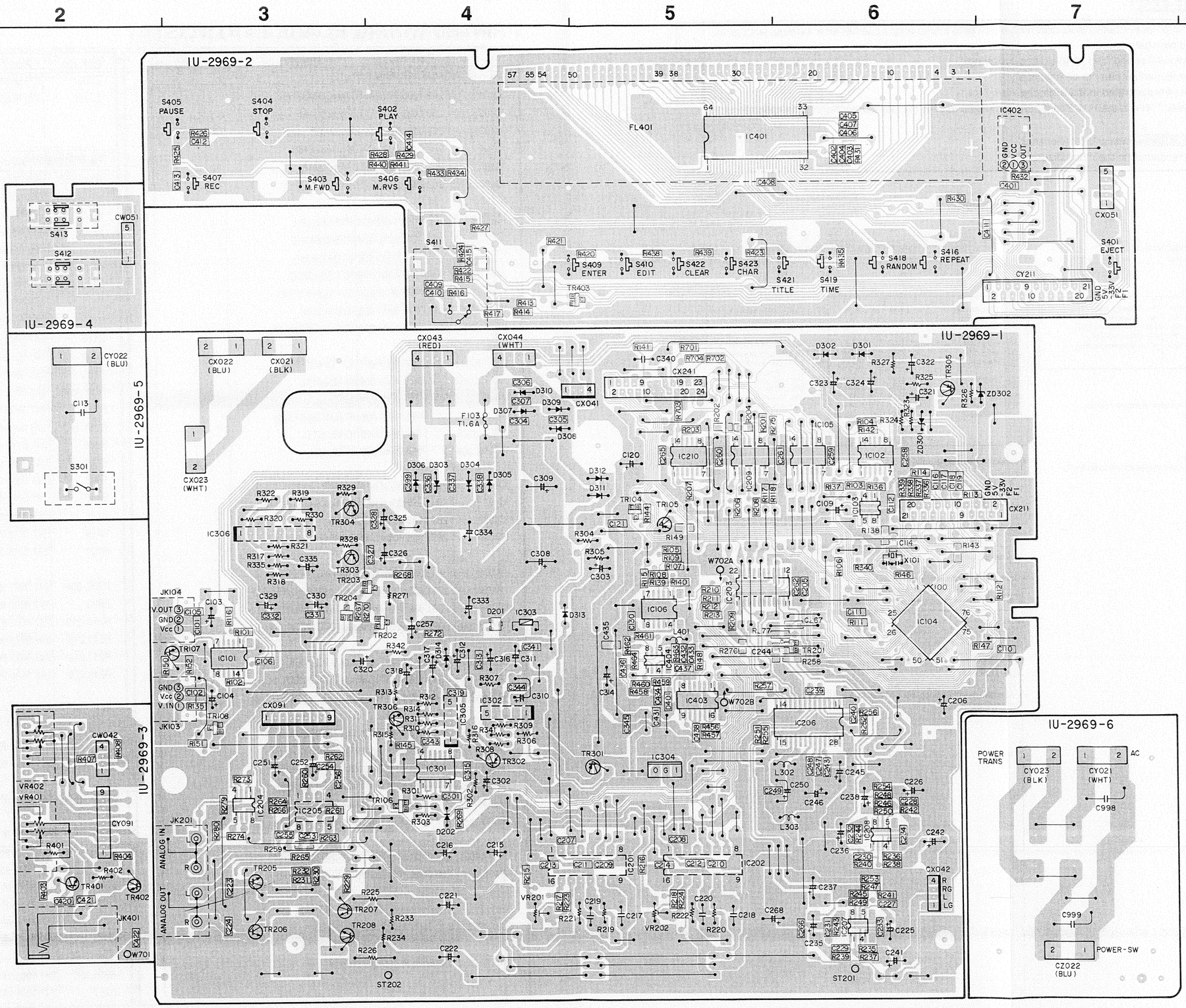
Internal Connection

	1~14G	15G	18G
S1	1	TOTAL	1
S2	2	▶	2
S3	3	SINGLE	3
S4	4	II	4
S5	5	○	5
S6	6	CD SRS	6
S7	7	D. IN	7
S8	8	TOC	8
S9	9	B	9
S10	10	A-	10
S11	11	1	11
S12	12	REPEAT	12

	1~14G	15G	18G
S13	13	ALL	13
S14	14	RANDOM	14
S15	15		15
S16	16		16
S17			
S18	18		18
S19	19		19
S20	20		20
S21	21		21
S22	22		22
S23	23		23
S24	24		24

	1~14G	15G	18G
S25	25	ALL	25
S26	26	RANDOM	26
S27	27		27
S28	28		28
S29	29		29
S30	30		30
S31	31		31
S32	32		32
S33	33		33
S34	34		34
S35	35	OFF	

PRINTED WIRING BOARD



NOTE FOR PARTS LIST

- Part indicated with the mark "⊙" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:
Parts marked with this symbol ⚠ ▓▓▓ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

● Resistors

Ex.: RN Type | 14K Shape and performance | 2E Power | 182 Resistance | G Allowable error | FR Others

RD : Carbon RC : Composition RS : Metal oxide film RW : Winding RN : Metal film RK : Metal mixture	2B : 1/8W 2E : 1/4W 2H : 1/2W 3A : 1W 3D : 2W 3F : 3W 3H : 5W	F : ±1% G : ±2% J : ±5% K : ±10% M : ±20%	P : Pulse-resistant type NL : Low noise type NB : Non-burning type FR : Fuse-resistor F : Lead wire forming

✻ Resistance

1 8 2 ⇒ 1800 ohm = 1.8 kohm
Indicates number of zeros after effective number.
2-digit effective number.
• Units: ohm

1 R 2 ⇒ 1.2 ohm
1-digit effective number.
2-digit effective number, decimal point indicated by R.
• Units: ohm

● Capacitors

Ex.: CE Type | 04W Shape and performance | 1H Dielectric strength | 2R2 Capacity | M Allowable error | BP Others

CE : Aluminum foil electrolytic CA : Aluminum solid electrolytic CS : Tantalum electrolytic CQ : Film CK : Ceramic CC : Ceramic CP : Oil CM : Mica CF : Metallized CH : Metallized	0J : 6.3V 1A : 10V 1C : 16V 1E : 25V 1V : 35V 1H : 50V 2A : 100V 2B : 125V 2C : 160V 2D : 200V 2E : 250V 2H : 500V 2J : 630V	F : ±1% G : ±2% J : ±5% K : ±10% M : ±20% Z : +80% −20% P : +100% −0% C : ±0.25pF D : ±0.5pF = : Others	HS : High stability type BP : Non-polar type HR : Ripple-resistant type DL : For change and discharge HF : For assuring high frequency U : UL part C : CSA part W : UL-CSA type F : Lead wire forming

✻ Capacity (electrolyte only)

2 2 2 ⇒ 2200μF
Indicates number of zeros after effective number.
2-digit effective number.
• Units: μF.

2 R 2 ⇒ 2.2μF
1-digit effective number.
2-digit effective number, decimal point indicated by R.
• Units: μF.

✻ Capacity (except electrolyte)

2 2 2 ⇒ 2200pF=0.0022μF
(More than 2) — Indicates number of zeros after effective number.
2-digit effective number.
• Units: μF.

2 2 1 ⇒ 220pF
(0 or 1) — Indicates number of zeros after effective number.
2-digit effective number.
• Units: pF.

• When the dielectric strength is indicated in AC, "AC" is included after the dieelectric strength value.

PRINTED WIRING BOARD PARTS LIST

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC101	262 1205 907	IC TC74HCU04AF	
IC102	262 1421 901	IC TC74HCT04AF	
IC103	263 0530 906	IC M51953AFP	
IC104	262 2329 002	IC HD6433837B48H	
IC105	262 1205 907	IC TC74HCU04AF	
IC106	262 2328 906	IC TC74HC05AF	
IC201,202	262 1409 004	IC PCM61P-L	
IC203	262 2210 904	IC SM5841HS	
IC204	263 0615 902	IC BA15218F	
IC205	262 0864 006	IC UPC4570C	
IC206	262 2016 904	IC AK5345-VS-E1	
IC207,208	263 0934 900	IC BA4510F	
IC209,210	262 1205 907	IC TC74HCU04AF	
IC301	262 1205 907	IC TC74HCU04AF	
IC302	263 1041 009	IC M5231TL	
⚠IC303	268 0074 904	IC ICP-N20	IC protector
IC304	263 0809 006	IC NJM7805FA(S)	
IC305	263 1041 009	IC M5231TL	
IC306	263 0646 007	IC M5230L	
IC401	262 1954 902	IC M66004FP	
IC402	499 0290 007	Remote sensor GP1U271X	
IC403	262 1883 905	IC TC9246F	
IC404	262 1953 903	IC TC7WU04F	
TR104	269 0082 902	Transistor DTC114EK	
TR105	272 0025 907	Transistor 2SB562(C)TF	
TR106	269 0082 902	Transistor DTC114EK	
TR108,109	269 0066 902	Transistor DTC323TK	
TR201,202	269 0082 902	Transistor DTC114EK	
TR203	269 0156 906	Transistor DTA124XKA	
TR205~208	274 0160 907	Transistor 2SD2144STPU	
TR301	272 0083 004	Transistor 2SB1185(E/F)	
TR302	272 0025 907	Transistor 2SB562(C)TF	
TR303	272 0083 004	Transistor 2SB1185(E/F)	
TR304	274 0120 002	Transistor 2SD1762(E/F)	
TR305	272 0083 004	Transistor 2SB1185(E/F)	
TR306	273 0303 910	Transistor 2SC1740S(S)	
TR401,402	274 0160 907	Transistor 2SD2144STPU	
TR403	269 0102 905	Transistor DTC124EK	
D201	276 0432 903	Diode 1SS270A	
D301~313	276 0553 905	Diode 1SR35-200A	
D314	276 0432 903	Diode 1SS270A	
D401	276 0625 901	Diode HVU17	
ZD301	276 0644 911	Zener diode MTZJ7.5A	7.5V
ZD302	276 0645 978	Zener diode MTZJ36A	36V
RESISTORS GROUP			
R101,102	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R105	247 0007 974	Carbon chip 1.3kohm 1/10W	RM73B--132J
R106	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R107	247 0008 915	Carbon chip 2kohm 1/10W	RM73B--202J
R108	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R109	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R111~114	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R115	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R116	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R119	247 0008 957	Carbon chip 3kohm 1/10W	RM73B--302J
R120	247 0012 927	Carbon chip 100kohm 1/10W	RM73B--104J
R135	247 0006 920	Carbon chip 330ohm 1/10W	RM73B--331J
R136,137	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R138	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R141,142	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R143	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R144	247 0008 944	Carbon chip 2.7kohm 1/10W	RM73B--272J
R145	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R146	247 0014 967	Carbon chip 1Mkohm 1/10W	RM73B--105J
R148	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R149	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R151	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R206~208	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R209	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R210~213	247 0006 920	Carbon chip 330kohm 1/10W	RM73B--331J
R215,216	247 0012 998	Carbon chip 200kohm 1/10W	RM73B--204J
R217,218	247 0013 984	Carbon chip 470kohm 1/10W	RM73B--474J
R219,220	241 2422 928	Carbon film 820ohm 1/4W (PSNB)	RD14B2E821J(PSNB)
R221,222	241 2426 940	Carbon film 47kohm 1/4W (PSNB)	RD14B2E473J(PSNB)
R223,224	247 0014 967	Carbon chip 1Mkohm 1/10W	RM73B--105J
R225,226	241 2421 961	Carbon film 470ohm 1/4W (PSNB)	RD14B2E471J(PSNB)
R227,228	241 2420 975	Carbon film 200ohm 1/4W (PSNB)	RD14B2E201J(PSNB)
R229~232	247 0008 944	Carbon chip 2.7kohm 1/10W	RM73B--272J
R235,236	247 0011 915	Carbon chip 36kohm 1/10W	RM73B--363J
R237,238	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R239,240	247 0011 915	Carbon chip 36kohm 1/10W	RM73B--363J
R241~244	247 0009 901	Carbon chip 4.7kohm 1/10W	RM73B--472J
R245~250	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R251,252	247 0005 947	Carbon chip 150ohm 1/10W	RM73B--151J
R253,254	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R255,256	247 0005 947	Carbon chip 150ohm 1/10W	RM73B--151J
R257	247 0006 962	Carbon chip 470ohm 1/10W	RM73B--471J

Ref. No.	Part No.	Part Name	Remarks
R258	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R259,260	247 0011 957	Carbon chip 51kohm 1/10W	RM73B--513J
R261,262	247 0008 986	Carbon chip 3.9kohm 1/10W	RM73B--392J
R263,264	247 0008 999	Carbon chip 4.3kohm 1/10W	RM73B--432J
R265,266	247 0010 990	Carbon chip 30kohm 1/10W	RM73B--303J
R267	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R270	247 0012 998	Carbon chip 200kohm 1/10W	RM73B--204J
R271	244 2051 974	Metal oxide 1kohm 1W	RS14B3A102JNBS(S)
R272	247 0004 922	Carbon chip 47ohm 1/10W	RM73B--470J
R277,278	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R279,280	247 0011 944	Carbon chip 47kohm 1/10W	RM73B--473J
R281,282	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R317	245 2368 961	Metal film 5.6kohm 1/4W	RN14K2E562F(5)
R318	245 2368 903	Metal film 3.3kohm 1/4W	RN14K2E332F(5)
R321,322	245 2369 960	Metal film 15kohm 1/4W	RN14K2E153F(5)
R335	245 2365 948	Metal film 270ohm 1/4W	RN14K2E271F(5)
R336~340	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R401,402	244 2055 970	Metal oxide 56ohm 1W	RS14B3A560JNBS(S)
R403,404	247 0008 944	Carbon chip 2.7kohm 1/10W	RM73B--272J
R407,408	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K
R413~415	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R416,417	247 0005 905	Carbon chip 100ohm 1/10W	RM73B--101J
R420	247 0005 963	Carbon chip 180ohm 1/10W	RM73B--181J
R421	247 0005 947	Carbon chip 150ohm 1/10W	RM73B--151J
R422	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R423	247 0005 947	Carbon chip 150ohm 1/10W	RM73B--151J
R424	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R425	247 0005 963	Carbon chip 180ohm 1/10W	RM73B--181J
R426	247 0005 947	Carbon chip 150ohm 1/10W	RM73B--151J
R427	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R428	247 0005 963	Carbon chip 180ohm 1/10W	RM73B--181J
R429	247 0005 947	Carbon chip 150ohm 1/10W	RM73B--151J
R430	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R431	247 0010 987	Carbon chip 27kohm 1/10W	RM73B--273J
R432	247 0009 985	Carbon chip 10kohm 1/10W	RM73B--103J
R433	247 0006 904	Carbon chip 270ohm 1/10W	RM73B--271J
R434	247 0006 946	Carbon chip 390ohm 1/10W	RM73B--391J
R435	247 0005 963	Carbon chip 180ohm 1/10W	RM73B--181J
R438	247 0006 904	Carbon chip 270ohm 1/10W	RM73B--271J
R439	247 0006 946	Carbon chip 390ohm 1/10W	RM73B--391J
R440	247 0006 904	Carbon chip 270ohm 1/10W	RM73B--271J
R441	247 0006 946	Carbon chip 390ohm 1/10W	RM73B--391J
R456,457	247 0006 962	Carbon chip 470ohm 1/10W	RM73B--471J
R458,459	247 0007 945	Carbon chip 1kohm 1/10W	RM73B--102J
R460~462	247 0010 929	Carbon chip 15kohm 1/10W	RM73B--153J
R463	247 0014 967	Carbon chip 1Mkohm 1/10W	RM73B--105J
R464	247 0010 929	Carbon chip 15kohm 1/10W	RM73B--153J
R702~705	247 0018 905	Carbon chip 0ohm 1/10W	RM73B--0R0K

Ref. No.	Part No.	Part Name	Remarks
R996	241 2422 928	Carbon film 820ohm 1/4W (PSNB)	RD14B2E821J(PSNB)
R999	241 2422 928	Carbon film 820ohm 1/4W (PSNB)	RD14B2E821J(PSNB)
VR201,202	211 6093 970	Semi fixed resistor 100kohm	V06PB104
VR401	211 0875 000	Variable resistor 2kohm	
VR402	211 0876 009	Variable resistor 50kohm	

CAPACITORS GROUP

C101,102	257 0010 900	Ceramic chip 0.01mF/50V	CK73B1H103K
C103,104	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C105,106	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C109	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C110~112	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C113	253 8014 702	Ceramic 0.01μF/400VAC	CK45F2GAC103MC
C114	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C205	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C206	254 4250 929	Electrolytic 100μF/6.3V	CE04W0J101M
C207~214	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C215,216	254 4356 713	Electrolytic 100μF/50V	CE04W1H101MC(ARS)
C217,218	255 4235 992	Mylar film 680pF/100V	CQ93P2A681J(NH)
C219,220	255 4235 963	Mylar film 5600pF/100V	CQ93P2A562J(NH)
C221,222	254 4356 713	Electrolytic 100μF/50V	CE04W1H101MC(ARS)
C223,224	257 0008 983	Ceramic chip 1000pF/50V	CK73B1H102K
C225,226	254 4368 947	Electrolytic 210μF/25V	CE04W1E221M(ASF)
C227,228	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C229,230	257 0004 929	Ceramic chip 68pF/50V	CC73SL1H680J
C231~234	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C235~238	254 4313 918	Electrolytic 10μF/50V	CE04W1H100M(ASF)
C239,240	257 0009 908	Ceramic chip 1500pF/50V	CK73B1H152K
C241,242	254 4313 918	Electrolytic 10μF/50V	CE04W1H100M(ASF)
C243	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C244	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C245,246	254 4313 918	Electrolytic 10μF/50V	CE04W1H100M(ASF)
C247~249	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C250	254 4368 947	Electrolytic 210μF/25V	CE04W1E221M(ASF)
C251,252	254 4368 934	Electrolytic 100μF/25V	CE04W1E101M(ASF)
C253,254	257 0004 903	Ceramic chip 56pF/50V	CC73SL1H560J
C255,256	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C257	254 4256 952	Electrolytic 220μF/25V	CE04W1E221M
C258~262	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C266	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C269,270	254 4368 934	Electrolytic 100μF/25V	CE04W1E101M(ASF)
C271	254 3056 917	CE04D1H010MBPT (SME)	CE04D1H010MBP
C301	257 0010 942	Ceramic chip 0.022μF/50V	CK73B1H223K
C302,303	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M
C304~307	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C308,309	254 4257 715	Electrolytic 4700μF/25V	CE04W1E472MC

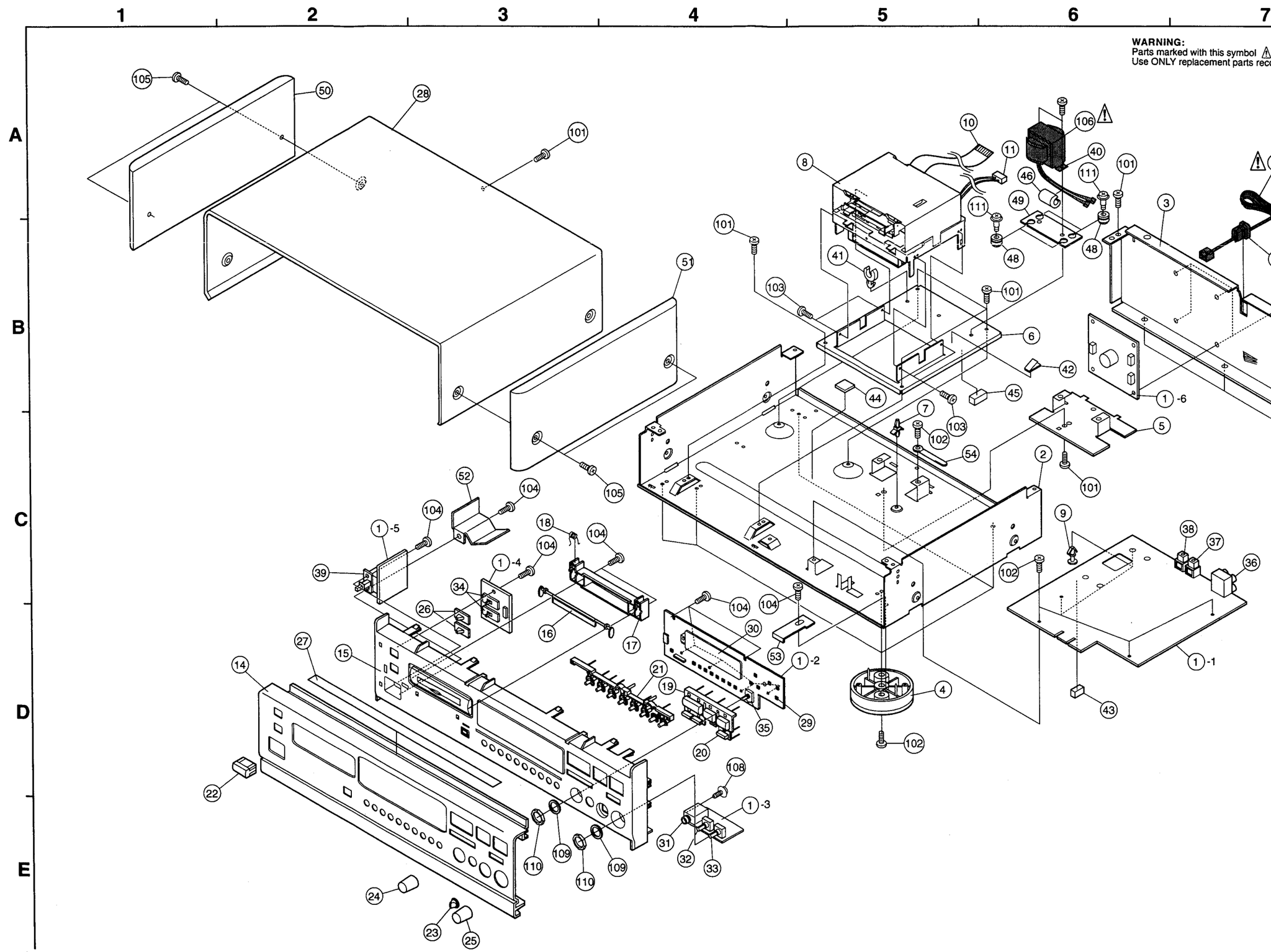
Ref. No.	Part No.	Part Name	Remarks
C310,311	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C312	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C313	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C314	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M
C315	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C316,317	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C318	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C319	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C320	259 0009 001	Back up cap. 1F/6.3V	GOLD CAP=105=
C321	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M
C322	254 4262 946	Electrolytic 47μF/63V	CE04W1J470M
C325,326	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C327,328	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C329,330	254 4313 950	Electrolytic 100μF/50V	CE04W1H101M(ASF)
C331,332	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C333,334	254 4366 703	Electrolytic 2200μF/25V	CE04W1E222MC(ASF)
C335	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C336~339	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C340	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C341	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C401,402	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C403	257 0004 961	Ceramic chip 100pF/50V	CC73SL1H101J
C404	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C405~407	257 0005 931	Ceramic chip 200pF/50V	CC73SL1H201J
C408~411	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C412~415	257 0007 900	Ceramic chip 1000pF/50V	CC73SL1H102J
C420~422	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C431	257 0009 966	Ceramic chip 4700pF/50V	CK73B1H472K
C432	257 0007 900	Ceramic chip 1000pF/50V	CC73SL1H102J
C433	257 0004 929	Ceramic chip 68pF/50V	CC73SL1H680J
C434	257 0012 924	Ceramic chip 2200pF/50V	CK73F1H222Z
C435	257 0009 966	Ceramic chip 4700pF/50V	CK73B1H472K
C436	257 0014 935	Ceramic chip 0.1μF/25V	CK73F1E104Z
C437	257 0007 900	Ceramic chip 1000pF/50V	CC73SL1H102J
C438	257 0010 900	Ceramic chip 0.01μF/50V	CK73B1H103K
C998,999	253 8014 702	Ceramic 0.01μF/400VAC	CK45F2GAC103MC

OTHER PARTS GROUP				Q'ty
CW042	203 6499 007	4P PH-SAN connector cord		1
CW051	203 8478 000	5P KR-DA connector cord		1
CX021	205 0581 056	2P VH connector base		1
CX022	205 0581 085	2P VH connector base		1
CX023	205 0581 001	2P VH connector base		1
CX041	205 0343 045	4P connector base(KR-PH)		1
CX042	205 0321 041	4P connector base(RED)		1
CX043	205 0277 043	4P EH connector base(RED)		1
CX044	205 0233 045	4P EH connector base		1
CX051	205 0355 059	5P KR connector base(L)		1
CX091	205 0343 090	9P connector base(KR-PH)		1
CX211	205 0491 049	21P FFC connector base		1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
CX241	205 0892 046	24P FFC base(P=1)		1
CY022	205 0581 085	2P VH connector base		1
CY091	205 0343 090	9P connector base(KR-PH)		1
CY211	205 0491 049	21P FFC connector base		1
⚠F103	206 1015 016	Fuse(1.25A)	DMD-1300 Europe model	1
			DMD-1550G Asia model	1
⚠	513 0654 033	Fuse label(1.25A)	DMD-1300 Europe model	1
			DMD-1550G Asia model	1
⚠F103	206 1039 050	Fuse(1.6A)	DMD-1300 U.S.A. model	1
⚠	202 0040 909	Fuse clip		2
FL401	393 8019 005	FL tube	FIP14XM1DA	1
	461 0862 003	FL spacer		2
JK103	269 0098 006	Optical output terminal	GP1F32T	1
JK104	269 0097 007	Optical input terminal	GP1F32R	1
JK201	204 8507 013	4P pin jack		1
JK401	204 8322 007	Headphone jack		1
L301	239 8019 002	Line filter coil		1
L302,303	235 0060 950	Inductor 10μH		2
L401	235 0056 935	Inductor chip 15μH		1
⚠S301	212 1101 006	Power switch(TV-5)		1
S401~404	212 5604 910	Tact switch		4
S405~407	212 5604 910	Tact switch		3
S409,410	212 5604 910	Tact switch		2
S411	212 0382 004	Rotary encorder		1
S412,413	212 1046 006	Slide switch		2
S416	212 5604 910	Tact switch		1
S418,419	212 5604 910	Tact switch		2
S421~423	212 5604 910	Tact switch		3
ST201,202	205 0452 017	Style pin		2
W701	203 0340 039	1P contact Ass		1
X101	399 0160 905	Crystal (8.00MHz)	CST8.00MTW-TF1	1
	417 0476 007	Radiator	IC304	1
	417 0476 049	Radiator	TR301	1
	412 4260 007	Earth plate		1
	471 3304 015	Screw 3X8	CBS-Z	2

EXPLODED VIEW

WARNING:
Parts marked with this symbol ⚠ ▒▒ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.



PARTS LIST OF EXPLODED VIEW

		Ref. No.	Part No.	Part Name	Remarks	Q'ty
⊙		1	1U- 2969 A	Main P.W.B. unit Ass'y(E2)		1s
		1-1	1U- 2969 -1	Main P.W.B. unit		(1)
		1-2	1U- 2969 -2	Display P.W.B. unit		(1)
		1-3	1U- 2969 -3	Headphone volume P.W.B. unit		(1)
		1-4	1U- 2969 -4	Timer switch P.W.B. unit		(1)
		1-5	1U- 2969 -5	Power switch P.W.B. unit		(1)
		1-6	1U- 2969 -6	Filter P.W.B. unit		(1)
⊙		2	411 0962 827	Chassis		1
⊙	✳	3		Back panel		1
⊙		4	104 0260 100	Foot Ass'y		4
⊙		5	441 1132 204	Bottom plate		1
⊙		6	412 4182 208	Mecha bracket		1
		7	443 0518 003	P.C.B. holder		1
		8	337 0051 003	MD mecha unit	MDM-81	1
		9	412 2814 057	Card spacer	L=12	2
		10	009 0146 000	24P FFC cable shield		1
		11	203 6498 011	4P shield connector cord		1
⚠	✳	12		AC cord with connector		1
⚠		13	445 0056 008	Cord bush		1
	✳	14		Front panel		1
⊙	✳	15		Inner panel Ass'y		1
⊙	✳	16		Door		1
⊙		17	441 1815 107	Door holder		1
⊙		18	463 0841 004	Door spring		1
	✳	19		Function knob(A)		1
	✳	20		Function knob(B)		1
	✳	21		Series knob		1
	✳	22		Power knob Ass'y		1
	✳	23		Knob(Fuji)		1
	✳	24		Knob(Maru)		1
	✳	25		Knob(Maru)		1
	✳	26		Slide knob		2
⊙		27	461 0192 029	Cushion sheet		1
⊙	✳	28		Top cover		1
		29	212 5604 910	Tact switch		15
		30	393 8019 005	FL tube	FL401	1
		31	204 8322 007	Headphone jack	JK401	1
		32	211 0875 000	Variable resistor 2kohm	Headphone VR401	1
		33	211 0876 009	Variable resistor 50kohm	Input VR402	1
		34	212 1046 006	Slide switch	S412,413	2
		35	212 0382 004	Rotary encorder	S411	1
		36	204 8507 013	4P pin jack	JK201	1
		37	269 0098 006	Optical output terminal	JK103	1
		38	269 0097 007	Optical input terminal	JK104	1
		39	212 1101 006	Power switch(TV-5)	S301	1
⚠	✳	40		Power trans		1
		41	445 0092 020	Mini clamp		1
		42	445 0068 009	Flat cable clamp		1
		43	461 0913 033	Pad		1
		44	461 0957 060	Rubber form		1
		45	461 0957 073	Rubber form		1
		46	342 0020 007	Ferrite core		1
		47	412 2741 049	P.W.B. holder	H=12	4
		48	462 0027 003	Rubber bush		4
		49	412 4238 000	Trans plate		1
		50	101 2525 103	Side wood(L)	DMD-1550G Asia model only	1
		51	101 2526 102	Side wood(R)	DMD-1550G Asia mode only	1
		52	415 0796 008	Insulating sheet		1
		53	412 4261 006	Earth plate(F)		1
		54	445 0048 016	Cord holder	L=50	1
★		55	513 2065 002	Laser caution	DMD-1300 Europe model only	1

SCREWS & NUTS					Q'ty
	101	473 7015 018	Screw 3X8	CBTS (S)-B	11
	102	473 7002 018	Screw 3X8	CBTS (S)-Z	9
	103	471 1826 016	Screw 2X6	CPS(B)	4
	104	473 7508 017	Screw 3X10	CBTS (P)-B	10
✳	105		Screw		4
	106	473 7004 016	4X6 CBTS (S)-Z	4X6 CBTS (S)-Z	2
	107	477 0064 107	Fixing screw		3
	108	477 0262 006	Special screw		1
	109	—	7 Washer		2
	110	—	7 Nut		2
	111	473 8039 103	Special screw 4X12		4

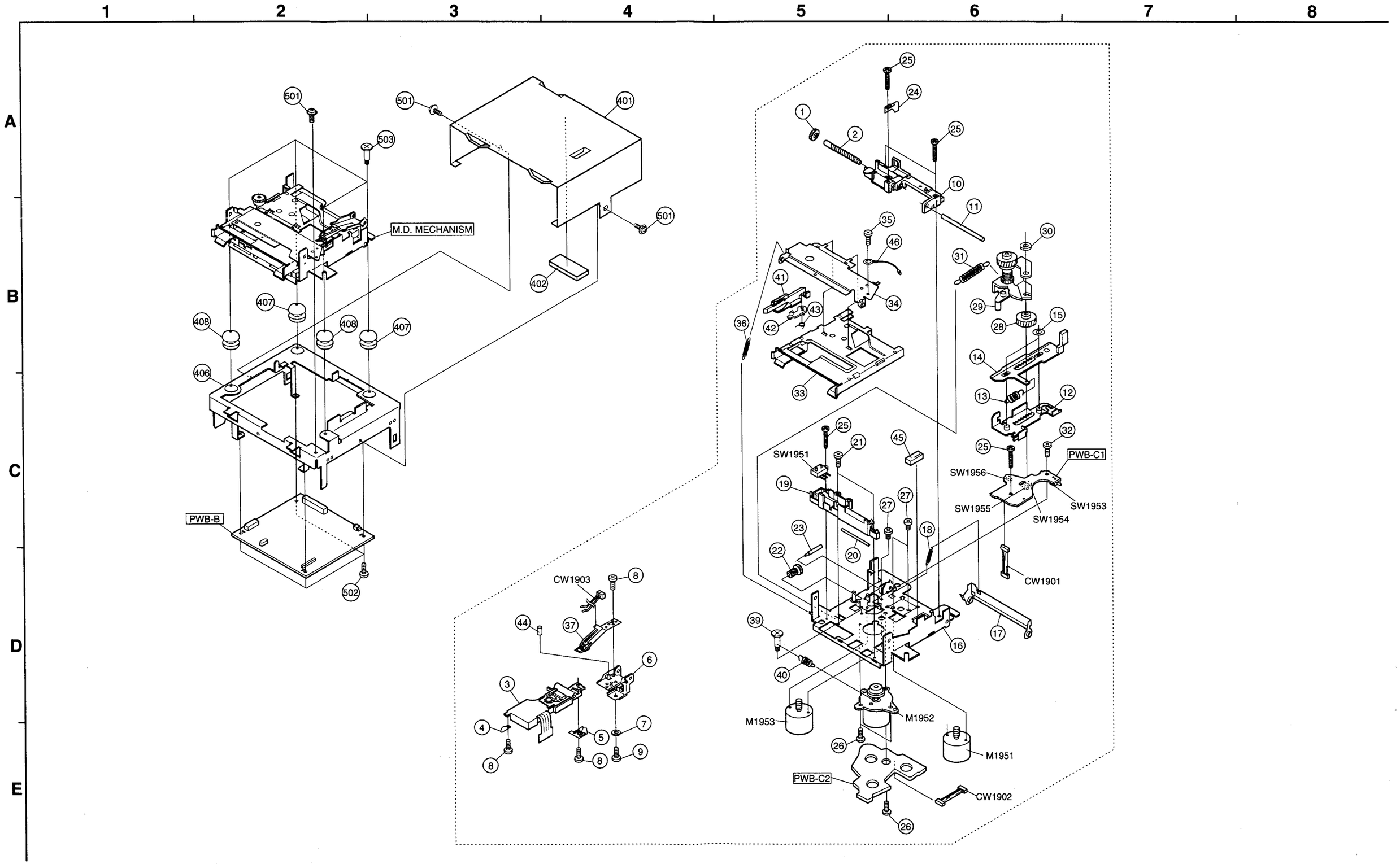
PACKING & ACCESORIES (Not included EXPLODED VIEW)					Q'ty
✳	81		Rating sheet		1
	82	505 8092 010	Laminate envelope		1
✳	83		Cushion		2
✳	84		Carton case		1
	85	505 0038 030	Poly cover		1
	86	505 9102 019	Poly cover	DMD-1550G Asia model only	1
	87	502 0855 007	Pad	DMD-1550G Asia model only	2
✳	88			Inst. manual	
	89	399 0340 000	Remote controll unit	RC-264	1
	80	203 2360 004	2P pin cord		2
	91	515 0690 103	DEL Warranty home	DMD-1300U.S.A. model only	1
	92	513 1389 006	Control card		1
	93	513 9111 001	Color label(GOLD)	DMD-1550G Asia model only	2
	94	513 1381 004	Manufac. date label	DMD-1300U.S.A. model only	1
	95	517 1316 000	UPC label	DMD-1300U.S.A. model only	1

Parts marked with the symbol ✳ differ according to the model,
Refer to ADDEMDUM PARTS LIST.

ADDENDUM PARTS LIST

Ref. No.	Part Name	DMD-1300 Europe model Part No.	MD-1300 U.S.A. model Part No.	MD-1550G Asia model Part No.
3	Back panel	105 1218 015	105 1218 028	105 1218 015
12	AC cord with connector	206 2089 106	206 2089 106	206 2089 106
14	Front panel	144 2520 118	144 2520 118	144 2520 121
15	Inner panel Ass'y	146 1654 311	146 1654 311	146 1654 308
16	Door	146 1653 011	146 1653 011	146 1653 008
19	Function knob(A)	113 1728 001	113 1728 001	113 1728 027
20	Function knob(B)	113 1776 053	113 1776 053	113 1776 040
21	Series knob	113 1777 052	113 1777 052	113 1777 049
22	Power knob Ass'y	113 9213 000	113 9213 000	113 9213 039
23	Knob(Fuji)	112 9100 178	112 9100 178	112 9100 165
24	Knob(Maru)	112 0779 045	112 0779 045	112 0779 003
25	Knob(Maru)	112 0779 058	112 0779 058	112 0779 016
26	Slide knob	113 1797 016	113 1797 016	113 1797 003
28	Top cover	102 0425 266	102 0425 266	102 0425 211
40	Power trans	233 6222 000	233 6223 009	233 6222 000
81	Rating sheet	513 2689 006	513 1581 011	513 2698 000
83	Cushion	503 1231 209	503 1231 209	503 1249 000
84	Carton case	501 1937 028	501 1937 028	501 1965 003
88	Inst. manual	511 3097 002	511 3113 009	511 3100 009
92	Control card	513 1389 006	513 1389 006	—
105	Screw	473 7018 002	473 7018 002	473 8027 005

MD MECHANISM EXPLODED VIEWEXPLODED VIEW



MD MECHANISM PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty
1	937 0159 006	Drive gear		1
2	937 0159 103	Drive screw shaft		1
3	937 0159 213	Optical pickup unit		1
4	937 0105 814	Shaft spring		1
5	937 0105 830	Drive grip spring		1
6	937 0159 307	Pickup guide bracket Ass'y		1
7	937 0107 304	Washer	φ1.4x0.5	2
8	937 0105 924	Screw 1.4x2.2		3
9	937 0106 033	Screw 1.4x3		2
10	937 0159 404	MD pickup guide(A)		1
11	937 0159 501	Pickup slide shaft		1
12	937 0159 608	Cam plate lever Ass'y		1
13	937 0159 705	Lack spring		1
14	937 0159 802	Lack gear		1
15	937 0159 909	Washer	φ1.2xφ3x0.25	2
16	937 0160 008	Mecha base		1
17	937 0160 105	Head arm up lever		1
18	937 0160 202	Shaft arm spring		1
19	937 0160 309	MD guide bracket(B)		1
20	937 0160 406	Pickup guide shaft		1
21	937 0160 503	Screw 1.7x7		2
22	937 0160 600	Loading gear(A)		1
23	937 0160 707	Loading gear shaft		1
24	937 0160 804	Driver shaft spring		1
25	937 0160 901	Screw 1.7x9		5
26	937 0161 007	Screw 1.7x2.5		3
27	937 0161 104	Screw 2x2		3
28	937 0161 201	Loading gear(B)		1
29	937 0203 606	Roller arm Ass'y		1
30	937 0161 405	Washer	φ1.5xφ3.2x0.5	1
31	937 0161 502	Roller arm spring		1
32	937 0161 609	Screw 1.7x3		1
33	937 0180 208	Cartridge holder Ass'y		1
34	937 0161 803	Holder arm		1
35	937 0161 900	Screw 1.7x5		1
36	937 0162 006	Holder arm spring		1
37	937 0162 103	Magnetic head		1
39	937 0162 200	Screw 2x2		1
40	937 0162 307	Disc motor spring		1
41	937 0165 401	Guide lever		1
42	937 0160 804	Catch lever		1
43	937 0180 509	Catch spring		1
44	937 0180 606	Head guide cover		1
45	937 0180 703	Cushion		1
46	937 0203 703	Connector Ass'y	with earth plug	1
401	937 0204 003	Protect cover		1
402	937 0162 608	Head cushion		1
406	937 0162 909	Frame		1
407	937 0163 005	Cushion(A)		2
408	937 0163 102	Cushion(B)		
501	937 0163 403	Screw 2x4		1
502	937 0163 500	Screw 1.7x3		4
503	937 0163 607	Screw 1.7x8.9		4
M1951	937 0150 801	MD Slide motor Ass'y		1
M1952	937 0150 908	MD Disc motor Ass'y		1
M1953	937 0151 004	MD Loading/head motor Ass'y		1
SW1951A/B	937 0152 100	Push switch		1
SW1953	937 0152 207	Push switch		1
SW1954,1955	937 0105 403	Push switch		2
SW1956	937 0152 304	Push switch		1
PWB-B	937 0205 604	MD Mechanism unit Ass'y		1
PWB-C1,2	937 0174 201	MD Mechanism switch/ motor unit Ass'y		1

MD MECHANISM UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC1101	937 0125 409	IC 1R3R50	
IC1201	937 0205 002	IC LR37545	
IC1202	937 0177 800	IC MN41V4400	
IC1251	937 0104 080	IC 74ACT02F	
IC1401	937 0205 109	IC 1X257BAF	
IC1402	937 0184 204	IC S29194A	
IC1601	937 0141 807	IC BA5996FP	
IC1602,1603	928 0056 105	IC NJM2115M	
IC1801	937 0142 107	IC HA15114F	
IC1802	937 0142 204	IC NJM2405M	
IC1803	263 0989 900	IC NJM2904M	
IC1906	937 0142 903	IC TC7ST08F	
IC1907	262 1883 905	IC TC9246F	
IC1913	937 0203 101	IC 74VHC08F	
IC1914	937 0142 301	IC TC7SH08F	
Q1101	937 0143 407	Transistor 2SB1424R	
Q1251,1252	937 0104 352	Transistor 2SK1847	
Q1253,1254	937 0128 406	Transistor 2SK1473	
Q1401	937 0205 206	Transistor RN2404	
Q1402	937 0205 303	Transistor RNC1404	
Q1403	937 0205 206	Transistor RN2404	
Q1404	937 0205 303	Transistor RNC1404	
Q1451	937 0205 400	Transistor RNC1407	
Q1501	937 0143 407	Transistor 2SB1424R	
Q1801	937 0143 407	Transistor 2SB1424R	
Q1803	937 0205 507	Transistor RN2407	
Q1804,1805	937 0205 303	Transistor RNC1404	
Q1807	937 0143 407	Transistor 2SB1424R	
Q1808~1810	956 0010 502	Transistor 2SC2712GR	
Q1820	271 0259 903	Transistor 2SA1162GR	
Q1821,1822	937 0205 303	Transistor RNC1404	
D1251,1252	937 0104 530	Diode SB0209CP-1	
D1401	276 0558 900	Diode DA204K	
D1801,1802	937 0143 805	Diode SB1005PC	
D1803	937 0203 208	Zener diode HZU9R1B2-1	
RESISTORS GROUP			
		Carbon (Chip) 0ohm	
CJ180		Carbon (Chip) 0ohm	
J1211		Carbon (Chip) 0ohm	
J1705		Carbon (Chip) 0ohm	
J1720		Carbon (Chip) 0ohm	
J1730		Carbon (Chip) 0ohm	
J1921		Carbon (Chip) 0ohm	
J1922		Carbon (Chip) 0ohm	
J1950		Carbon (Chip) 0ohm	
J1953		Carbon (Chip) 0ohm	
J1970		Carbon (Chip) 0ohm	

Ref. No.	Part No.	Part Name	Remarks
L1601		Carbon (Chip) 0ohm	
LR190		Carbon (Chip) 560ohm 1/10W	
R1000		Carbon (Chip) 12ohm 1/8W	
R1100		Carbon (Chip) 35ohm 1/8W	
R1110		Carbon (Chip) 100ohm 1/16W	
R1111		Carbon (Chip) 12kohm 1/16W	
R1114		Carbon (Chip) 22kohm 1/16W	
R1115		Carbon (Chip) 47kohm 1/16W	
R1117		Carbon (Chip) 120kohm 1/16W	
R1118		Carbon (Chip) 12kohm 1/16W	
R1120,1121		Carbon (Chip) 22kohm 1/16W	
R1122		Carbon (Chip) 120kohm 1/16W	
R1123		Carbon (Chip) 12kohm 1/16W	
R1127		Carbon (Chip) 220kohm 1/16W	
R1128		Carbon (Chip) 12kohm 1/16W	
R1129,1130		Carbon (Chip) 47kohm 1/16W	
R1131		Carbon (Chip) 220kohm 1/16W	
R1133		Carbon (Chip) 12kohm 1/16W	
R1134,1135		Carbon (Chip) 33kohm 1/16W	
R1136		Carbon (Chip) 470ohm 1/16W	
R1140		Carbon (Chip) 1ohm 1/16W	
R1141		Carbon (Chip) 1kohm 1/16W	
R1142		Carbon (Chip) 1.2kohm 1/16W	
R1143		Carbon (Chip) 1kohm 1/16W	
R1144		Carbon (Chip) 390ohm 1/16W	
R1146		Carbon (Chip) 3.3Mohm 1/16W	
R1147,1148		Carbon (Chip) 100kohm 1/16W	
R1149		Carbon (Chip) 39kohm 1/16W	
R1152		Carbon (Chip) 0ohm	
R1153		Carbon (Chip) 180kohm 1/16W	
R1154		Carbon (Chip) 10kohm 1/16W	
R1155		Carbon (Chip) 22kohm 1/16W	
R1156		Carbon (Chip) 120kohm 1/16W	
R1157		Carbon (Chip) 560ohm 1/16W	
R1158		Carbon (Chip) 68kohm 1/16W	
R1159,1160		Carbon (Chip) 47kohm 1/16W	
R1161		Carbon (Chip) 220ohm 1/16W	
R1162		Carbon (Chip) 2.2kohm 1/16W	
R1163		Carbon (Chip) 15kohm 1/16W	
R1164		Carbon (Chip) 10kohm 1/16W	
R1166		Carbon (Chip) 1.2kohm 1/16W	
R1201		Carbon (Chip) 150ohm 1/16W	
R1202		Carbon (Chip) 1Mohm 1/16W	
R1210		Carbon (Chip) 100ohm 1/16W	
R1211		Carbon (Chip) 220ohm 1/16W	
R1221		Carbon (Chip) 220ohm 1/16W	
R1223		Carbon (Chip) 330ohm 1/10W	
R1251		Carbon (Chip) 10ohm 1/16W	
R1252,1253		Carbon (Chip) 4.7ohm 1/16W	
R1254		Carbon (Chip) 220ohm 1/10W	

Ref. No.	Part No.	Part Name	Remarks
R1260~1262		Carbon (Chip) 10kohm 1/16W	
R1264		Carbon (Chip) 18kohm 1/16W	
R1265		Carbon (Chip) 51kohm 1/16W	
R1401		Carbon (Chip) 1kohm 1/16W	
R1404		Carbon (Chip) 1kohm 1/16W	
R1406,1407		Carbon (Chip) 3.3kohm 1/16W	
R1408		Carbon (Chip) 100kohm 1/16W	
R1409		Carbon (Chip) 1kohm 1/16W	
R1412		Carbon (Chip) 100kohm 1/16W	
R1413		Carbon (Chip) 3.3kohm 1/16W	
R1414		Carbon (Chip) 10kohm 1/16W	
R1415		Carbon (Chip) 1kohm 1/16W	
R1416		Carbon (Chip) 10kohm 1/16W	
R1420		Carbon (Chip) 1kohm 1/16W	
R1421		Carbon (Chip) 3.3kohm 1/16W	
R1422~1424		Carbon (Chip) 10kohm 1/16W	
R1425		Carbon (Chip) 2.7kohm 1/16W	
R1426		Carbon (Chip) 1kohm 1/16W	
R1427		Carbon (Chip) 4.7kohm 1/16W	
R1428		Carbon (Chip) 1kohm 1/16W	
R1429,1430		Carbon (Chip) 10kohm 1/16W	
R1440		Carbon (Chip) 10kohm 1/16W	
R1441		Carbon (Chip) 10kohm 1/16W	
R1452		Carbon (Chip) 3.3kohm 1/16W	
R1454		Carbon (Chip) 1kohm 1/16W	
R1456		Carbon (Chip) 1kohm 1/16W	
R1458		Carbon (Chip) 6.8kohm 1/16W	
R1459		Carbon (Chip) 10kohm 1/16W	
R1460		Carbon (Chip) 6.8kohm 1/16W	
R1461		Carbon (Chip) 10kohm 1/16W	
R1462		Carbon (Chip) 6.8kohm 1/16W	
R1463		Carbon (Chip) 10kohm 1/16W	
R1464		Carbon (Chip) 220ohm 1/16W	
R1466		Carbon (Chip) 220ohm 1/16W	
R1468~1472		Carbon (Chip) 47kohm 1/16W	
R1473		Carbon (Chip) 100kohm 1/16W	
R1474~1476		Carbon (Chip) 1kohm 1/16W	
R1606		Carbon (Chip) 1kohm 1/16W	
R1607,1608		Carbon (Chip) 27ohm 1/8W	
R1609		Carbon (Chip) 3.9kohm 1/16W	
R1610,1611		Carbon (Chip) 12kohm 1/16W	
R1613		Carbon (Chip) 33kohm 1/16W	
R1614		Carbon (Chip) 18kohm 1/16W	
R1615		Carbon (Chip) 33kohm 1/16W	
R1617		Carbon (Chip) 10kohm 1/16W	
R1620~1622		Carbon (Chip) 100ohm 1/16W	
R1650		Carbon (Chip) 10kohm 1/16W	
R1651		Carbon (Chip) 47kohm 1/16W	
R1652		Carbon (Chip) 10kohm 1/16W	
R1653		Carbon (Chip) 47kohm 1/16W	
R1654		Carbon (Chip) 6.8kohm 1/16W	
R1655		Carbon (Chip) 47kohm 1/16W	

Ref. No.	Part No.	Part Name	Remarks
R1656		Carbon (Chip) 6.8kohm 1/16W	
R1657		Carbon (Chip) 47kohm 1/16W	
R1658		Carbon (Chip) 18kohm 1/16W	
R1659		Carbon (Chip) 47kohm 1/16W	
R1660		Carbon (Chip) 18kohm 1/16W	
R1661		Carbon (Chip) 47kohm 1/16W	
R1662		Carbon (Chip) 10kohm 1/16W	
R1663		Carbon (Chip) 33kohm 1/16W	
R1664		Carbon (Chip) 10kohm 1/16W	
R1665		Carbon (Chip) 33kohm 1/16W	
R1708		Carbon (Chip) 6.8kohm 1/16W	
R1718,1719		Carbon (Chip) 0ohm	
R1733		Carbon (Chip) 1kohm 1/16W	
R1735		Carbon (Chip) 47kohm 1/16W	
R1758,1759		Carbon (Chip) 1kohm 1/16W	
R1804		Carbon (Chip) 3.9kohm 1/16W	
R1805		Carbon (Chip) 2.7kohm 1/16W	
R1806,1807		Carbon (Chip) 1.2kohm 1/16W	
R1811		Carbon (Chip) 390ohm 1/10W	
R1812		Carbon (Chip) 82ohm 1/10W	
R1820		Carbon (Chip) 680ohm 1/16W	
R1821		Carbon (Chip) 820ohm 1/16W	
R1822		Carbon (Chip) 3.9kohm 1/16W	
R1823		Carbon (Chip) 15kohm 1/16W	
R1825		Carbon (Chip) 1.2kohm 1/16W	
R1826		Carbon (Chip) 27kohm 1/16W	
R1827		Carbon (Chip) 10kohm 1/16W	
R1830~1835		Carbon (Chip) 1ohm 1/16W	
R1836		Carbon (Chip) 100ohm 1/16W	
R1837		Carbon (Chip) 22kohm 1/16W	
R1841		Carbon (Chip) 27kohm 1/16W	
R1842		Carbon (Chip) 27kohm 1/16W	
R1843		Carbon (Chip) 6.8kohm 1/16W	
R1845		Carbon (Chip) 10kohm 1/16W	
R1846		Carbon (Chip) 12kohm 1/16W	
R1847		Carbon (Chip) 24kohm 1/16W	
R1855		Carbon (Chip) 39kohm 1/16W	
R1856		Carbon (Chip) 150kohm 1/16W	
R1857		Carbon (Chip) 220kohm 1/16W	
R1858		Carbon (Chip) 2.2Mohm 1/16W	
R1859		Carbon (Chip) 3.9kohm 1/16W	
R1860		Carbon (Chip) 2.7kohm 1/16W	
R1861		Carbon (Chip) 12kohm 1/16W	
R1927		Carbon (Chip) 0ohm	
R1938		Carbon (Chip) 1kohm 1/16W	
R1940		Carbon (Chip) 220ohm 1/16W	
R1947,1948		Carbon (Chip) 47ohm 1/16W	
R1951		Carbon (Chip) 0ohm	
R1952,1953		Carbon (Chip) 47ohm 1/16W	
R1960		Carbon (Chip) 22ohm 1/16W	
R1961		Carbon (Chip) 100ohm 1/16W	
R1962		Carbon (Chip) 220kohm 1/16W	

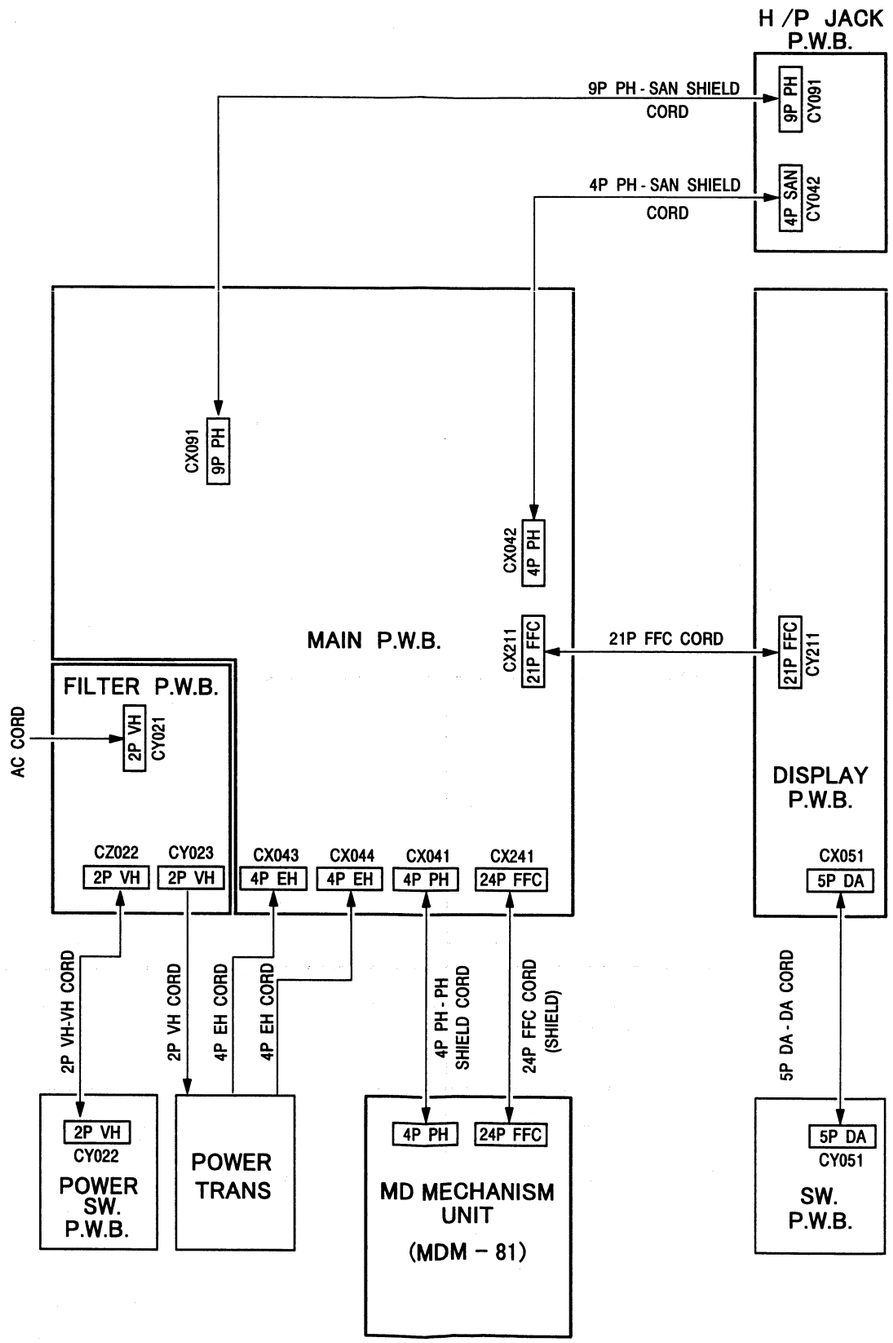
Ref. No.	Part No.	Part Name	Remarks
R1963		Carbon (Chip) 1.5kohm 1/16W	
R1964		Carbon (Chip) 6.8kohm 1/16W	
R1965		Carbon (Chip) 10kohm 1/16W	
R1967		Carbon (Chip) 47ohm 1/16W	
R1968		Carbon (Chip) 220ohm 1/16W	
R1969		Carbon (Chip) 10ohm 1/16W	
R1973		Carbon (Chip) 6.8kohm 1/16W	
R1974		Carbon (Chip) 220ohm 1/16W	
R1981,1982		Carbon (Chip) 10kohm 1/16W	
R1993		Carbon (Chip) 0ohm	
R1994		Carbon (Chip) 47ohm 1/16W	
R1995		Carbon (Chip) 56ohm 1/16W	
VR1110	937 0146 501	Semi fixed 68kohm (B)	
CAPACITORS GROUP			
C1100		Ceramic (Chip) 2.2µF/16V	
C1101	937 9958 004	Ceramic (Chip) 1µF/16V	
C1104	937 9958 059	Ceramic (Chip) 3pF(CH)/50V	
C1105	937 9958 062	Ceramic (Chip) 220pF(CH)/50V	
C1108,1109	937 9958 075	Ceramic (Chip) 8pF(CH)/50V	
C1110	937 9958 088	Ceramic (Chip) 2.2µF/16V	
C1111	937 9958 091	Ceramic (Chip) 0.47µF/16V	
C1112	937 9958 088	Ceramic (Chip) 2.2µF/16V	
C1114,1115	937 9958 114	Ceramic (Chip) 12pF(CH)/50V	
C1120	937 9958 088	Ceramic (Chip) 2.2µF/16V	
C1122	937 9958 101	Ceramic (Chip) 1µF/16V	
C1124	937 9958 088	Ceramic (Chip) 2.2µF/16V	
C1125	937 9958 062	Ceramic (Chip) 220pF(CH)/50V	
C1126	937 9958 130	Ceramic (Chip) 100pF(CH)/50V	
C1127	937 9958 004	Ceramic (Chip) 1µF/16V	
C1128		Ceramic (Chip) 390pF/50V	
C1129		Ceramic (Chip) 330pF/50V	
C1130		Ceramic (Chip) 0.0033µF/50V	
C1131		Ceramic (Chip) 330pF/50V	
C1132,1133		Ceramic (Chip) 1µF/16V	
C1134,1135		Ceramic (Chip) 0.022µF/16V	
C1136,1137		Ceramic (Chip) 0.0068µF/50V	
C1138		Ceramic (Chip) 10pF(CH)/50V	
C1139		Ceramic (Chip) 0.1µF/16V	
C1140		Ceramic (Chip) 1µF/16V	
C1141		Ceramic (Chip) 2.2µF/16V	
C1142,1143		Ceramic (Chip) 1µF/16V	
C1144		Ceramic (Chip) 6pF(CH)/50V	
C1145		Ceramic (Chip) 0.033µF/16V	
C1146		Ceramic (Chip) 1µF/16V	
C1147		Ceramic (Chip) 0.047µF/16V	
C1148		Ceramic (Chip) 2pF(CH)/50V	
C1201		Ceramic (Chip) 33pF(CH)/50V	
C1202		Ceramic (Chip) 0.47µF/16V	
C1203		Ceramic (Chip) 1µF/16V	
C1204,1205		Ceramic (Chip) 12pF(CH)/50V	

Ref. No.	Part No.	Part Name	Remarks
C1206		Ceramic (Chip) 1µF/16V	
C1208		Ceramic (Chip) 0.047µF/16V	
C1209,1210		Ceramic (Chip) 0.47µF/16V	
C1251		Ceramic (Chip) 0.027µF/16V	
C1252		Ceramic (Chip) 120pF(CH)/50V	
C1253~1255		Ceramic (Chip) 2.2µF/16V	
C1260		Ceramic (Chip) 330pF/50V	
C1401		Ceramic (Chip) 680pF/50V	
C1402		Ceramic (Chip) 0.047µF/6V	
C1403		Ceramic (Chip) 680pF/50V	
C1405		Ceramic (Chip) 0.1µF/25V	
C1406		Ceramic (Chip) 1µF/16V	
C1407		Ceramic (Chip) 0.022µF/16V	
C1412		Ceramic (Chip) 680pF/50V	
C1421~1424		Ceramic (Chip) 0.022µF/16V	
C1501		Ceramic (Chip) 1µF/16V	
C1502		Ceramic (Chip) 220pF(CH)/50V	
C1504		Ceramic (Chip) 0.047µF/16V	
C1505		Electrolytic 10µF/16V	
C1631		Ceramic (Chip) 1µF/16V	
C1650~1653		Ceramic (Chip) 820pF/50V	
C1654,1655		Ceramic (Chip) 0.0047µF/50V	
C1656,1657		Ceramic (Chip) 0.0056µF/50V	
C1658,1659		Ceramic (Chip) 0.1µF/25V	
C1661		Electrolytic 160pF/10V	
C1724		Ceramic (Chip) 22pF(CH)/50V	
C1729		Ceramic (Chip) 47pF(CH)/50V	
C1804		Ceramic (Chip) 1200pF/50V	
C1805		Electrolytic 22µF/10V	
C1808		Electrolytic 47µF/25V	
C1809		Ceramic (Chip) 1µF/16V	
C1810		Ceramic (Chip) 0.0027µF/50V	
C1811		Ceramic (Chip) 220pF(CH)/50V	
C1819		Electrolytic 33µF/6.3V	
C1820		Ceramic (Chip) 0.0016µF/50V	
C1825		Ceramic (Chip) 0.1µF/25V	
C1826		Ceramic (Chip) 0.47µF/16V	
C1827		Ceramic (Chip) 0.47µF/16V	
C1828		Ceramic (Chip) 0.0027µF/50V	
C1829		Ceramic (Chip) 0.1µF/25V	
C1833		Ceramic (Chip) 0.0027µF/50V	
C1834		Electrolytic 33µF/25V	
C1835		Ceramic (Chip) 0.1µF/25V	
C1836		Ceramic (Chip) 5pF(CH)/50V	
C1837		Ceramic (Chip) 1µF/16V	
C1838,1839		Ceramic (Chip) 2.2µF/25V	
C1913		Ceramic (Chip) 22pF(CH)/50V	
C1917		Ceramic (Chip) 33pF(CH)/50V	
C1951		Ceramic (Chip) 0.047µF/16V	
C1952		Ceramic (Chip) 0.01µF/16V	
C1953		Ceramic (Chip) 0.47µF/16V	
C1954		Ceramic (Chip) 16pF(CH)/50V	

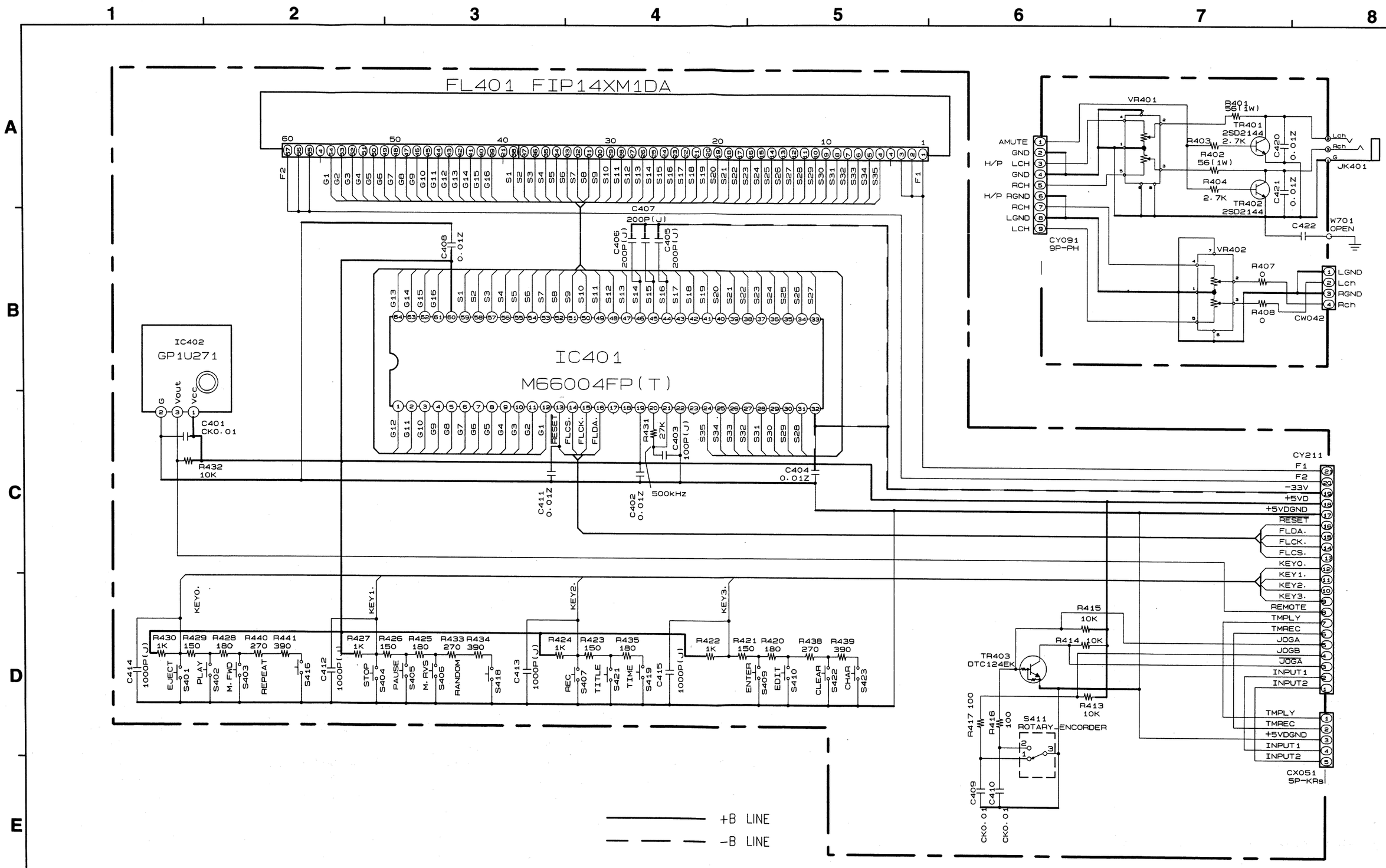
Ref. No.	Part No.	Part Name	Remarks
C1955		Ceramic (Chip) 0.047µF/16V	
C1956		Electrolytic 47µF/6.3V	
C1957		Electrolytic 100µF/6.3V	
C1958		Ceramic (Chip) 0.047µF/16V	
C1964		Ceramic (Chip) 1000pF/50V	
CJ172		Ceramic (Chip) 47pF(CH)/50V	
JC121		Ceramic (Chip) 0.047µF/16V	
JC122		Ceramic (Chip) 22pF(CH)/50V	
JC170,171		Ceramic (Chip) 47pF(CH)/50V	
JC195		Ceramic (Chip) 22pF(CH)/50V	
R1453		Ceramic (Chip) 0.047µF/16V	
R1612		Ceramic (Chip) 1µF/10V	
RC120		Ceramic (Chip) 0.012µF/25V	

OTHER PARTS GROUP				Q'ty
L1101,1102	937 0203 305	Coil 1µH		2
L1201	937 0104 608	Coil 0.47µH		1
L1203	937 0104 608	Coil 0.47µH		1
L1251	937 0104 608	Coil 0.47µH		1
L1302	937 0104 608	Coil 0.47µH		1
L1801	937 0203 402	Coil 100µH		1
L1802	937 0145 706	Coil 68µH		1
L1950	937 0145 900	Coil 1µH		1
XL1201	937 0147 005	Crystal 33.8688 MHz		1
B11902/ CNS1902	937 0148 059	5-5P connector Ass'y		1
CN1101	937 0105 005	26P socket		1
CN1252	937 0148 318	2P plug		1
CN1601	937 0148 321	5P plug		1
CN1602	937 0148 334	5P plug		1
CN1901	937 0148 347	5P plug		1
CN1902	937 0148 509	24P socket		1
CN1904	937 0203 509	4P plug		1
CNS1252	937 0148 046	2P connector Ass'y		1
CNS1602A/B	937 0148 499	5-5P connector Ass'y		1
M1951	937 0150 801	Slide motor Ass'y		1
M1952	937 0150 908	Disc motor Ass'y		1
M1953	937 0151 004	Loading/head motor Ass'y		1
SW1951A/B	937 0152 100	Push switch		1
SW1953	937 0152 207	Push switch		1
SW1954,1955	937 0105 403	Push switch		2
SW1956	937 0152 304	Push switch		1

WIRING DIAGRAM



SCHEMATIC DIAGRAM



SCHEMATIC DIAGRAM

1 2 3 4 5 6

CW051 TMPLY TMREC GND(D1-3) INPUT1 INPUT2
SLIDE SWITCH(2-3)
S412 TIMER REC/PLAY
SLIDE SWITCH(2-3)
S413 INPUT SELECT
TIMER PLAY TIMER REC TIMER OFF
DIGITAL IN ANALOG ATM ON ANALOG ATM OFF

CX042 4P-PH(RD) LGND LCH RGND RCH
ST202 ST201

OPTICAL IN JK104 GP1F32R
OPTICAL OUT JK103 GP1F32T(OPT.OUT)
C101 CK0.01 C103 10/16 C102 CK0.01 C104 10/16 J107

CX041 4P-PH DIGOUT GND(D1-1) GND(D1-1) DIGIN
R101 47K R116 100 IC101 TC74HCU04AF C105 CK0.01 2MHz
R102 47K R135 100 C106 CK0.01 IC101 TC74HCU04AF GND(D1-1)

IC101 TC74HCU04AF ×4

+5V(D1-1) C438 CK0.01 R456 470 R457 470 C431 CK4700P W702B IC403 TC9246F F256
R460 15K R464 15K R458 1K R459 1K C437 CK1000P C436 0.1Z R461 15K R462 15K
IC404 TC7WU04F ×3 C435 CK4700P C434 CK2200P D401 HVU17 C433 68P GND(D1-1)

R705 0 R701 OPEN R275 330K R201 47K C258 C259 CK0.01×2 IC209 TC74HCU04AF
11.289MHz(5V) R118 OPEN R117 OPEN
R202 OPEN R206 1K R702 0 DADATA
1.4MHz(5V) R203 OPEN R703 0 BLCK C285 OPEN C277 OPEN
R207 1K R210 IC210 TC74HCU04AF
R204 OPEN R704 0 LACK R208 1K R148 SHORT
CK0.01×3

IC210 TC74HCU04AF ×4 IC209 TC74HCU04AF ×4
C229 58P R239 36K C241 10/50(ASF) R237 10K R235 36K IC207 BA4510
C225 220/25(ASF) C227 0.1Z R241 4.7K R243 4.7K C231 0.1Z C233 0.1Z
C230 68P R240 36K C242 10/50(ASF) R238 10K R236 36K IC208 BA4510
C226 220/25(ASF) C228 0.1Z R242 4.7K R244 4.7K C232 0.1Z C266 0.01Z

CX211 F1 F2 -33V(D1-1) +5V(D1-1) GND(D1-1) RESET FLDA FLCK 3.9KHz FLCS KEY0 KEY1 KEY2 KEY3 REMOTE TMPLY TMREC JOGA JOGB JOGA INPUT1 INPUT2

R151 0 TR108 DTC323TK TR105 2SB562(C)T R149 1K R143 47K R144 2.7K TR104 DTC114EK

R336 10K R338 10K R337 10K R339 10K R116 OPEN R117 OPEN R118 OPEN R119 OPEN R112 10K R113 10K R114 10K
TMREC INPUT1 INPUT2 JOGB P.LEVEL KEY3 KEY2 KEY1 KEY0 C112 CK0.01 FLDA FLCS FLCK JOGA POWER.DOWN REMOTE SCK
J103 SHORT R147 OPEN +3V ON/OFF +5V(D1-1) C340 CK0.01 CK0.01

IC102 TC74HCU04AF ×2 IC103 M51953A C109 1/50 TMPLY R138 1K
MDDATA DSTB R136 0 R137 0 IC102 HCT04 ×3 R103 OPEN R104 OPEN R141 0 R142 0
J105 SHORT X101 8MHz C114 0.01Z R106 10K J106 SHORT R105 1.3K R107 2K
250KHz DSCK MDDATA KDATA DSTB
IC104 HD6433836
PC3 AVss TEST X2 X1 Vss OSC1 OSC2 RESET MD0 -IRQ4 SRVICE P22 P23 P24 P25 P26 P27 SCK1 SI1 SO1 SCK2 SI2 SO2 STRB
P97 P96 P95 P94 P93 P92 P91 P90 P87 P86 P85 P84 P83 P82 P81 P80 P77 P76 P75 P74 P73 P72 P71 P70 P67
AMUTE. ADRST EMPHA MDST MDRESET R119 3K

CX241 P.DOWN +3V(D1-1) LOAD IN MDRESET MDST DSCK KDATA MDDATA DSTB GND(D2-1)
GND(D1-1) F256 11.289MHz(3V) C121 C120 R108 0 R139 OPEN R109 1K R140 OPEN
IC106 TC74HC05AF ×6 ADDATA LACK BLCK 1.4MHz(3V) DADATA R115 0 DFS1 DFS0 +10V(D1-1)
C130 OPEN GND(D1-1)
P.DOWN C110 CK0.01 DFS1 DFS0 J104 SHORT R111 10K
IC105 TC74HCU04AF ×4 +5V(D1-1)
R120 100K DTC323TK TR109 GND(D1-1)

GND(D2-1) GND(D1-1) +3V(D1-1) +10V(D1-1)
C313 CK0.01 C312 10/16 C344 10/16
D314 1SS270A R342 47 C320 GOLD CAP=105= C343 OPEN C319 CK0.01 C318 10/16 R310
R145 10K TR10 DTC11

5 6 7 8 9 10

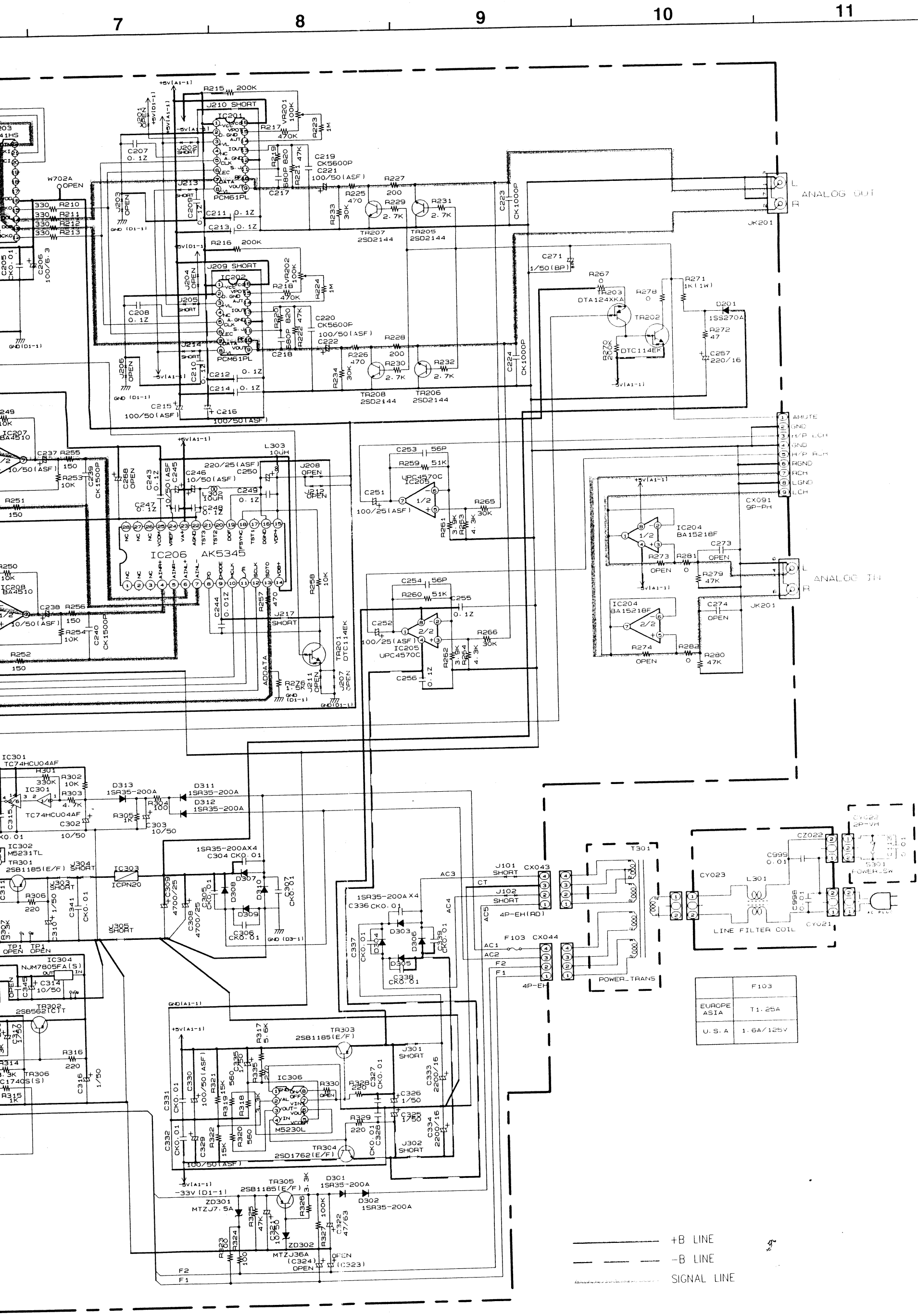
11.289MHz(5V)
1.4MHz(5V)
IC209 TC74HCU04AF
IC210 TC74HCU04AF
IC404 TC7WU04F
IC203 SM5841HS
IC201
IC202
IC207 BA4510
IC208 BA4510
IC206 AK5345
PCM61PL
J210 SHORT
J209 SHORT
J213 SHORT
J214 SHORT
DADATA
BLCK
LRCK
EMPHA
ADRST
ADDATA
W702A OPEN
TR207 2SD2144
TR205 2SD2144
TR208 2SD2144
TR206 2SD2144
TR201 DTC114EK
TR203 DTA124XKA
TR202 DTC114EK
TR106 DTC114EK
POWER DOWN
+3V ON/OFF
IC301 TC74HCU04AF
IC302 M5231TL
IC303 ICPN20
IC304 NJM7805FA(S)
IC305 M5231TL
TR301 2SB1185(E/F)
TR302 2SB562(CTT
TR303 2SB1185(E/F)
TR304 2SD1762(E/F)
TR305 2SB1185(E/F)
TR306 2SC1740S(S)
IC204 BA15218F
IC205 UPC4570C
IC306 M5230L
DTC323TK TR109
AMUTE.
ADRST
EMPHA
MDST
MDRESET
POWER_TRANS
4P-EH(RD)
4P-EH
F103 CX044
T301
+B LI
-B LI
SIGNA

NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

WARNING:
Parts marked with this symbol ⚠ have
Use ONLY replacement parts recommended by

CAUTION:
Before returning the unit to the customer, make
leakage current check or (2) a line to chassis re
current exceeds 0.5 milliamps, or if the resistan
of the power cord is less than 240 kohms, the u

WARNING:
DO NOT return the unit to the customer until th
corrected.



	F103
EUROPE ASIA	T1.25A
U.S.A	1.6A/125V

+B LINE

-B LINE

SIGNAL LINE

NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

WARNING:
Parts marked with this symbol ⚠ ▭ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.